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OPAQUE CANAL OF CLOQUET WITH PERSISTENT HYALOID ARTERY
(SCARLETT'S CASE)

PLATE X

AMERICAN JOURNAL OF OPHTHALMOLOGY

Vol. 5 DECEMBER, 1922 No. 12

OPAQUE CANAL OF CLOQUET WITH PERSISTENT HYALOID ARTERY.

HUNTER W. SCARLETT, M.D.

PHILADELPHIA.

The facts of anatomy and embryology bearing upon such anomalies are reviewed. DeBeck's classification is given. A case is reported in which vision of the eye in question was light perception. There was an opaque canal of Cloquet, persistent hyaloid artery and also adventitious vessels on the surface of the canal. Illustrated by Plate 10.

Remnants of the hyaloid artery are among the most commonly observed anomalies of the vitreous, and usually are of little pathologic significance.

Meisner in 1855 first described a strand 3 mm. long, projecting from the optic disc, as the remains of the hyaloid artery. Independently, H. Muller in 1856 found a similar strand as a constant condition in oxen, and predicted that it would soon be discovered in the human eye. Saemisch and Zehender described it in man in 1863.

Anatomically, the hyaloid artery is a fetal structure, springing from the central artery, and passing thru the vitreous in the third or fourth month to the posterior surface of the lens, where it breaks up into numerous branches, forming the posterior lental plexus or vascular sheath. It is not accompanied by a vein.

By the end of the 5th and the beginning of the 6th month, the artery is surrounded by a distinct cellular sheath, lying in a space lined by a definite hyalin membrane, the Canal of Cloquet. Toward the anterior end, this cellular sheath disappears, leaving the artery to lie alone in the hyaloid space. By the end of fetal life, the entire vitreous lental system disappears.

According to Parsons,[1] where the artery persists there are numerous variations such as, (1) a small tag attached to the disc; (2) the entire artery associated with a posterior polar cataract; (3) the division of the artery in its middle, leaving the anterior and posterior parts to flap in the vitreous; (4) a posterior polar cataract, with or without a tag of tissue attached.

DeBeck,[2] in his comprehensive monograph on "Persistent Remains of the Fetal Hyaloid Artery", divides them into twelve different groups as follows:

(1) Shreds of tissue on the optic disc.

(2) Membranes on the disc.

(3) Cystic remains on the disc.

(4) Masses of connective tissue on the disc.

(5) Rudimentary strand attached to the disc.

(6) Strand attached to the disc, and a vestige also at the posterior surface of the lens.

(7) Strand passing from the disc to the lens.

(8) Similar strand containing blood (subgroup).

(9) Strand attached to the lens alone.

(10) Posterior capsular cataract.

(11) Striae on the posterior lens capsule.

(12) Persistent canal (without any remnant of the vessel).

The remnant may appear as a bluish white delicate cord of fibrous tissue, or it may contain a small vessel with blood, or the cord may be larger with new adventitious vessels on its surface. Some consider these as the remnants of the Canal of Cloquet, but as that normally exists in a transparent state, some other factor must be involved. Stilling believes the sheath enveloping the hyaloid artery remains as an open

tubular canal after the vessel has disappeared.

The artery is differentiated from the canal by some, because it possesses the caliber of a vessel, while the latter is larger, stalk like, and ends in a bulbous formation.

Concomitant anomalies are common, among which may be named colobomas of the iris, lens, choroid, disc and macula, aniridia, persistent pupillary membrane, congenital cataract, as well as posterior and anterior lenticonus and choroiditis, probably congenital in origin, which is a frequent complication. Large masses of connective tissue on the disc and extending on to the retina are frequently observed. These are probably inflammatory or hemorrhagic in origin. Cyst formations, pearly gray in color, and of varied form have been observed on the disc.

Case History—Miss M. B., age 21. Came because of poor vision in her right eye, which had existed as long as she could remember. Previous and family history negative.

O.D.V. = light perception. O.S.V. = 6/6. External examination negative.

Ophthalmoscopy—In the right eye there is a light bluish gray stalk, about 1/2 the size of the disc and attached to it, which proceeds forward into the vitreous, ending in a bulbous mass just posterior and to the temporal side of the lens. It does not float about with the movement of the eye.

Coursing thru this stalk is a blood vessel coming from the disc, and containing blood, while several small adventitious vessels may be seen on the surface. There is no vein present. By pressure on the eyeball, the current in the central vessel can be interrupted to a more or less degree.

As the connective tissue of the stalk covers so much of the disc, it is impossible to say exactly how the vessel within the stalk takes its origin, whether from the central artery or from one of its branches on the disc, altho from its position and direction it would seem to spring from the former. The vessels on the surface of the stalk rise from branches of the central artery on the disc.

About two d.d. to the nasal side of the disc is a large irregularly shaped white mass, with long arms projecting into the vitreous, resembling a patch of proliferating retinitis. Several areas of choroidal pigment disturbance are discerned in the neighborhood of the stalk, and thruout the fundus.

The majority of cases of fetal hyaloid structure reported have referred simply to the remains of the hyaloid artery not containing blood, and without special reference to the canal of Cloquet, while those of the latter that are recorded make little or no mention of vessels carrying blood, altho Collins[3] gives as one of the possible anomalies, a central artery persistent thruout its entire length, and Parsons[4] describes in the pathology of the vitreous a tube with a vessel within the lumen, and adventitious vessels on the surface.

Collins[5] reported a case with a grayish white mass in the pupillary area resembling glioma, for which the eye was enucleated. Examination showed it to be a whitish mass posterior to the lens, from which a slender cord extended to the disc. Microscopy revealed blood cells within the lumen.

Despagnet[6] described a case showing a grayish white tube extending from the lens to the disc, but with no vessels either within or on its surface. He designated it as a "Persistent Canal of Cloquet."

Fuchs[7] refers to a small filament attached to the central artery as a means by which the remnants of the hyaloid structure may be differentiated from a pathologic condition of the vitreous, which may resemble it. Instead of a filament, a tube may be present.

Galezowski[8] says he has seen a case of persistence of the artery and vein, while Parsons claims the vein is never present.

Von der Heydt[9] has observed with the Gullstrand slit lamp and the binocular microscope, a filament or spiral attached to the posterior capsule, somewhat down and nasally, in the postlental space. This he regards as a remnant of the hyaloid artery, and thinks it is evidence of the fact that the whole of the vitreous lental systhem is not

absorbed at birth. He believes this filament is present in most eyes.

The last subdivisio of DeBeck's classification of cases more nearly resembles mine, with the exception that these cases do not contain vessels.

He says that in almost all cases of persistent canal, it is found in both eyes, while in the ordinary forms of persistent artery, the remnant occurs in but one eye in more than 5/6 of the cases.

The case here presented is of interest, as the accompanying illustration shows because of:

(1) The unusual caliber of the Canal of Cloquet and its opaqueness thruout its entire length.

(2) The persistence of the hyaloid artery, carrying blood, within the canal.

(3) The clear distinction of the adventitious vessels on the surface of the canal.

(4) The reduction of vision to light perception.

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CLINICAL OBSERVATIONS ON THE CORNEA.

ROBERT VON DER HEYDT, M.D.

CHICAGO, ILLINOIS.

With improved illumination, the corneal microscope permits exact observations of the changes in the anterior segment of the eye, which throw light on the nature and progress of such changes. Deposits on the posterior surface of the cornea, keratoconus, copper embedded in the cornea without irritation, corneal changes in electric ophthalmia and herpes are here described.

PRECIPITATES ON THE POSTERIOR SURFACE OF THE CORNEA.

The phenomenon of what are apparently minute droplets deposited on the posterior surface of the cornea is an early sign of iridocyclitis, and may be the only evidence of the incipiency of pathology. In certain cases of ocular pathology, not as yet definitely classified, similar droplets have been identified by Vogt as being edematous endothelial cells, and this observation has been later confirmed by Staehli. Aside from these "droplets" and probably individual cells, some pigmented, and pigment granules, the latter likely an evidence of senile depigmentation of the uvea, we find the larger cell conglomerations, the socalled mutton tallow spots on the posterior surface of the cornea in iridocyclitis.

The configuration assumed by these deposits, as seen in focal illumination, by means of the ophthalmoscope, is well known. As to their genesis, there may be some doubt. However, the theory advanced by Fuchs, that they are in all likelihood leucocytes, which have united to form smooth, round masses within the aqueous, has thus far not been successfully disproven by observation of the living eye with the microscope. Koeppe has claimed that if this form of origin be true, such "balls" must be found elsewhere on the iris or free within the aqueous. While he does not deny having seen similar masses, he feels inclined to believe that such as are seen on the posterior corneal surface are due to a successive apposition of individual cells and small cell masses.

Observation of many cases under high power leaves little doubt in my mind that they are deposited as one mass, and do not grow larger.

The following factors point to this, in agreement with Fuchs. The cell masses at the time of precipitation are apparently quite soft in consistency, for they spread out, are flat and regular in outline. This latter factor alone would exclude an accretionary development.

These masses of leucocytes, with apparently so much affinity for one another when forming within the aqueous, seemingly lose this cohesive desire when attached to the cornea, for tho we may observe enormous numbers develop in a very short time, yet these mutton tallow spots never seem to be even in part superimposed. They are individual, do not increase in size, tho a new group may make a very sudden appearance at any time in the process of the disease.

Newer observations pertaining to the (in all probability) senile process of depigmentation within the anterior chamber, may give food for thought as to the distribution of pigment in the deposits on the posterior corneal surface. It is a matter of frequent observation, that fresh exudates on the anterior lens capsule are almost immediately covered by a chocolate like pigment coating. These fresh exudative masses, when impregnated by pigment cells, seem to stimulate the latter into very active proliferation. I have seen large areas of exudate fully covered by new pigment over night. The impregnation may be by direct contact with the retinal pigment of the iris, or as likely by pigment free within the aqueous,—thus accounting for the pigmentation of isolated masses in the center of the pupillary area. It may be of interest to mention in this connection, that I have observed similar pigmented masses attached to the *posterior lens capsule* in cases of cyclitis.

The mutton tallow spots on the back of the cornea would, by their coloration in the majority of cases, present an absence of contact with pigment cells of any kind, unless their physical character were at times such as to exclude successful pigmentation. Some, however, are sparsely pigmented, especially in their centers, leading one to believe that this thicker center of the exudative mass may give a somewhat stunted nourishment to a few pigment cells after impregnation in situ, or they may, according to Fuchs, bring their pigment with them from their uveal origin.

In other cases, all deposits on the posterior corneal surface are covered by pigment, even on the attached surface. These masses may have been impregnated while in transit thru an aqueous containing free pigment cells.

In long quiescent cases of iridocyclitis, small star shaped masses, if on the posterior corneal surface, without a doubt represent old deposits to a great extent absorbed, in fact they may be permanent evidences of a former exudative process. These stars must not be confounded with similar, more uniform, pigmented three or four tailed pupillary membrane remnants, found so very frequently and often in great masses on the anterior lens capsule in normal eyes. It is well known that these acquire their pigment after birth. In this connection, it is of interest to know that I have found that these "stars" participate in the process of senile depigmentation; for if found in older individuals, they as a rule present a grayish appearance, a prima facie evidence of senile pigment absorption.

I have also observed pigmented masses, regularly deposited and round, on the posterior cornea in an old case of specific iridocyclitis, connected by a regular network of fibrin, individual strands between all deposits. At the time of observation, this network was not free within the aqueous, as is seen at times. I had opportunity to show this case to Prof. Gallemaerts of the University of Brussels, the first European authority on microscopy of the living eye to visit our country. We agreed that the picture presented could only be explained by accepting it as an evidence of "crystallization" in the process of absorption.

KERATOCONUS.

During the past two years, I have had an opportunity of studying seven cases of keratoconus under slit lamp illumination with the binocular microscope.

Two of these cases were fairly well

advanced, and showed the typical opacification and the most often vertical striping in the middle and deep corneal parenchyma. In both cases the normal nerve fibers were decidedly thickened.

The eye most advanced in this particular pathologic condition presented a rupture of Descemet's membrane.

The other cases presented keratoconus in its incipiency. One eye, tho the process was advanced to a point where it was possible to discern the conus macroscopically, when seen from the side, failed to show microscopic changes. In the four eyes of two other incipient cases, the most pronounced early change was the keratoconus ring of Fleischer, a curved line of pigment granules, supposedly of hematogenous origin, deposited in the basal epithelium. This line is similar in nature to the pigment line often found in corneal cicatrices, at times in normal corneae. This was first described by Staehli, who now believes that the coloration of the epithelium may have an extraocular origin, possibly from impurities in the lacrimal fluid.

COPPER IMBEDDED WITHIN THE CORNEAL STROMA.

A fifteen year old boy was injured as the result of a Fourth of July explosion. One eye was enucleated. The other has only the perception of light. This eye shows at least twenty-five particles of copper deeply imbedded within the cornea, all of which are metallically clean. Some were as large as one millimeter in diameter, thin and with their flat surfaces parallel to the surface of the cornea, for this reason having failed to penetrate. They all seemed to be retained without irritation of the surrounding stroma, and there was no ciliary injection one year after injury.

Several opacities, continuous thru the cornea, gave evidence of the perforation of other particles. A larger piece of copper was seen at the bottom of the anterior chamber. This had a piece of transparent lens capsule attached to it, the copper evidently having been freed from its original location in the lens capsule by a needling done for the traumatic cataract.

CORNEAL CHANGES IN ELECTRIC OPHTHALMIA.

In a patient whose eyes were exposed to a flash of a shortcircuit, high tension current, the cornea after twenty-four hours presented dew like changes of the epithelium, and many very minute epithelial cell erosions, which latter faintly stained with fluorescein.

The striking peculiarity of this case was the sharp demarkation of the involved corneal zone. Crescentic areas including about the lower one-fourth of both corneas, which no doubt at the time of the "flash" were covered by the lower eyelids, failed to show a pathologic condition. There were no visible retinal changes, both eyes presented a slight ciliary and conjunctival injection. The socalled photophobia, so often described in similar cases, was temporarily removed in this case by an instillation of cocain, proving that this symptom was in reality not retinal but due to a mild irritation of the traumatized corneal epithelium.

HERPES OF THE CORNEA.

A case of typical skin eruption, along the supraorbital and supratrochlear nerves, identified a coexisting keratitis on the same side as being of the same etiology, in this way giving an opportunity of observing a corneal lesion, without the question of diagnosis.

Macroscopically the cornea presented a fairly circumscribed, round area of grayish infiltration, involving about one-fifth of the cornea in an upper nasal zone. There was ciliary injection, epiphora, and a moderate amount of pain. Repeated inspection, over a period of several weeks, showed no change. Deep vascularization, such as is so characteristic in specific parenchymatous keratitis, did not develop. The surface epithelium was stippled over this area and stained faintly in minute spots, showing epithelial cell erosions. Dew like changes of the epithelium were visible over the area involved, and extended somewhat into the more normal cornea. This remained stationary, therefore, a part of the lesion and not an evidence of progression. There were two elevated "humps" on the surface of the

cornea, presenting not a fluid accumulation as might be expected, but what must have been localized zones of edema of the corneal stroma, judging by their appearance, size, and behavior over a prolonged period of time. Over the back of the lesion, Descemet's membrane was thrown into broad folds. The endothelium covering the lesion was studded with at least fifty pigment cells or granules. This peculiarity has proven an endothelial change sufficient to allow of the adhesion of these granules posterior to the involved zone. Pigment granules were sparsely present on the back of the uninvolved corneal area, also in the other eye, thus proving that while they attached themselves in greater numbers on the pathologically changed endothelium, their presence in the aqueous had no relation to the corneal process, but was an evidence of senile *depigmentation* of the uvea of both eyes, coexisting in this individual.

TWO CASES OF RETINITIS PROLIFERANS OF SYPHILITIC AND DIABETIC ORIGIN.

V. L. Raia, M.D.

PROVIDENCE, R. I.

Although the two patients were examined repeatedly for a long time, large hemorrhages were never observed on the retina or in the vitreous. Therefore they are excluded as factors of the new formations. Read before the Rhode Island Ophthalmological and Otological Society, February, 1922.

Case 1. S. S., Armenian, 29 years of age, well nourished, strongly built, was seen the first time in July, 1913. In September, 1912, he contracted syphilis; four months later his eyes became affected and were treated at

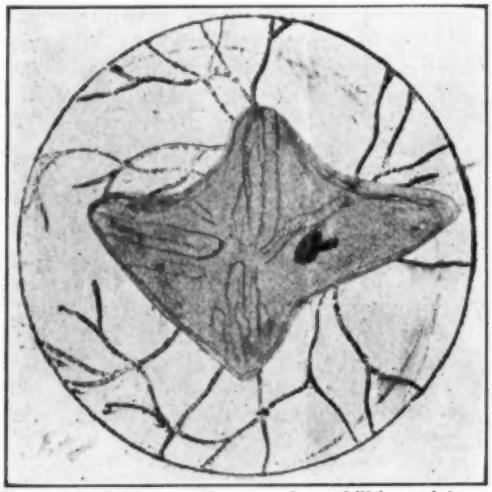

Fig. 1. Retinitis proliferans of syphilitic origin. (Case 1).

the Massachusetts Eye and Ear Infirmary with injections, mercury, etc. Repeated examinations revealed the following eye conditions: Left eye. Pupil irregular, small, not dilatable, with deposits of pigment and exudates on the anterior capsule. Could not count fingers at any distance.

Right eye. External appearance normal, pupil dilatable with atropin, lens clear, vitreous transparent, optic disc entirely concealed by a large white membrane of an irregular rhomboidal shape. Two opposite angles were directed vertically and the other two horizontally. The one on the temporal side of the fundus deviated slightly upward, while the other, on the lower part, just a little outward. Numerous new formed fine blood vessels were seen on the surface, and one hemorrhagic spot. The retinal blood vessels were underneath the new formation, and were seen emerging at its boundary on the retina. The surface, with the numerous capillaries, protruded into the cavity of the vitreous, and became clear by direct ophthalmoscopic examination with +10 D.

The patient went to Philadelphia and other cities, remained in different hospitals for observation, was the subject of study and lectures, and returned here the following year, in 1914, totally blind. The vitreous grew gradually opaque, the fundus more and more indistinct, until all the interior of the eye became uniformly white.

CASE 2. E. S., German, 56 years of age, considerably emaciated, pale, was seen the first time in July, 1921. Father died, according to the patient, of arteriosclerosis; mother of unknown disease, when he was a child. He has only one brother, who is 5 years older and is blind in one eye. About three years ago, sugar was found in his urine, and at the same time vision in the right eye began to fail. Patient has been under treatment ever since for diabetes, and at present he attends the Out Patient Department of the R. I. Hospital. Right eye: External appearance normal, pupil dilatable, anterior chamber of normal depth, lens clear, vitreous with fine floating opacities. The optic disc is concealed by a white mass, from which originate three strands. These extend onto the neighboring retina in three different directions, one upward and outward, another downward, the third, the shortest, toward the nasal side of the retina. This last one is composed of white bundles of delicate filaments, interlaced and curved at their ends, and not movable with the movements of the eyeball. The retinal blood vessels pass beneath the growth, which is best seen by the direct ophthalmoscopic examination with + 8 or + 10 D. In the macular region, several white spots are observed, grouped in a round area of a disc's diameter. Vision is reduced to counting fingers at two feet.

Left eye: The retina, when the patient was first examined, showed numerous white and hemorrhagic spots. But at present, the fundus has become totally indistinct from fixed opacities of the vitreous. Patient cannot count fingers at any distance.

According to Manz, who first described the affection in 1870, under the name of retinitis proliferans, the new formation of connective tissue is the consequence of an inflammation of the retina. Leber thought it to be due to extensive and recurrent hemorrhages in the retina and vitreous. The great majority of the writers who have reported other cases are of this opinion. Some believe that the coagulated blood becomes organized, others think that the blood, remaining for a long time unabsorbed, by its pressure produces either atrophy of the retina or proliferation of the connective tissue. Dr. Casali, of Florence, has observed that large coagula, which remain attached tenaciously for a long time to the walls of the retinal vessels near the disc, are those specially liable to be followed by the new formation. The connective tissue of the adventitia becomes active by the irritation of the extravasated

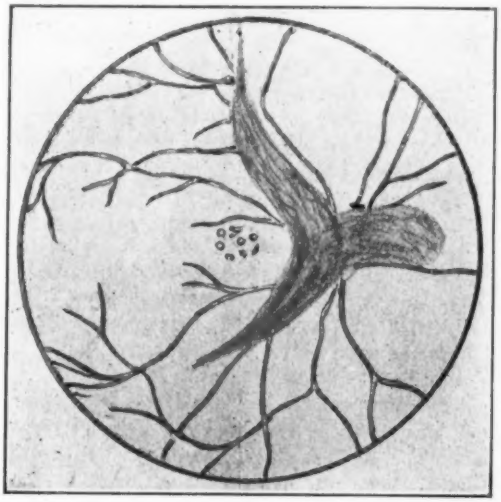

Fig. 2. Retinitis proliferans with diabetes. (Case II).

blood and proliferates, producing white masses, which conceal the optic disc and follow the direction of the blood vessels.

Hemorrhages in the retina and vitreous are of rather common occurrence, and they disappear rapidly or very slowly, without leaving traces of connective tissue proliferation. When this takes place, special conditions must exist, or agents unknown to us must act on the internal structure of the eye.

Cirincione has reported and described microscopically two cases of retinitis proliferans, and has come to the conclusion, that the new formation starts from the walls of the blood vessels near the disc, and that the hemorrhages which are frequently seen

are accidental and not the cause of the affection. He believes that the proliferation of the connective tissue from the adventitia is the consequence of the irritation, produced by chemical and toxic substances in the vitreous.

In both our cases, hemorrhages in the retina were insignificant, a rather small spot being present on the surface of the new formed membrane of the first and several round ones on the retina of the second, not dissimilar to those of an ordinary retinitis. None were observed in the vitreous, altho we had the opportunity to examine the patients repeatedly for a long period. This fact renders the two cases which we have reported very interesting, as it confirms the opinion of those writers who deny absolutely that hemorrhages precede and are the cause of the proliferation of the retina.

SOME FACTS ABOUT SALICYLAT THERAPY.

S. R. GIFFORD, M.D.

OMAHA, NEBRASKA.

This paper summarizes observations bearing on the way in which salicylates, and drugs having similar effects, produce benefit in ocular inflammations. Practical points in the use of this class of drugs are given. It is based on work done in the Department of Ophthalmology of the University of Nebraska Medical College. Read before the Colorado Congress of Ophthalmology and Oto-Laryngology, July, 1922.

In spite of the undoubted value of the salicylates in ocular diseases, their use is still based on almost purely empiric grounds. Many theories have been proposed as to their mode of action, and some careful investigations have been carried out. While this work has not shown any one theory to be correct, it has incidentally brought to light some facts about the drug, which should not be without interest to clinicians.

In another paper[1], I have discussed these theories of the general action of the drug, but they may be briefly summarized here.

The first explanation that occurs is, that the drugs may be bactericidal in their effect, or inhibit bacterial growth. Sodium salicylat and acetylsalicylic acid, however, require concentrations of 1:250 or more to inhibit bacterial growth, and much greater concentrations to kill bacteria. Since these concentrations could never be obtained in the living body, it is evident that the effect of the drug is not directly bactericidal.

Salicylic acid inhibits growth at 1:1000 and kills bacteria at 1:300, but since it is a severe local irritant, it is not possible to secure such concentrations by giving the drug as such. It was supposed, however, by Binz[2] and others, that the free acid might be split off from its salts in the tissues; and especially in inflamed tissues where the CO_2 tension is abnormally high. Other work, however, by Feser and Friedberger[3], Hanzlik[4], and recently by Boots and Cullen[5], has shown that it is impossible to recover free salicylic acid from blood or any body tissues, whether inflamed or not, so that the free acid can play no part in any bacterial effect. Animal inoculation experiments have been no more successful. Work by Davis[6] and Boots and Swift[7] has shown no difference in the incidence of arthritis in inoculated animals with or without sodium salicylat, tho the latter workers found much clearer joint fluid in animals getting the drug. Infection occurred, but the reaction was much milder than in control animals.

Campbell[8] observed leucocytosis after the drugs, and ascribed their effects to this increase in the body's defenses. It seems to me, however, that the leucocytosis was due to the infection rather than the drug in his cases; since I have observed[9] cases of uveitis with blood counts before and after the drug was started, and noted no significant changes in the blood picture. Nor

was any change noted in the blood counts of animals getting the drug. So that it seems doubtful if leucocytosis plays any part in the action of the salicylates. H. Gifford[10] believed Oltramare's theory to be the most acceptable. This assumed that the general vasodilatation caused by the drug produced a compensatory depletion of the previously engorged vessels in the inflamed part. As far as I know, there is little evidence for or against this, except the clinical fact that such general vasodilatation and local depletion does occur. A related explanation is that of Hanzlik[11] "that the benefit to the joints may possibly be attributed to the local circulatory effects, which facilitate the interchange of inflammatory products."

In using the salicylates, it is becoming generally recognized that large doses must be given to secure the desired effect. H. Gifford[12] was the first ophthalmologist to use anything like the present large doses in ocular affections, and his dosage for sodium salicylat, one grain per pound of body weight per day, has proven a convenient one to many clinicians.

One reason for the necessity of large doses is the rapidity with which the drugs are excreted by the kidneys. Salicyl is found in the urine within five to eight minutes after a dose by mouth. Hanzlik[13] has shown, that tho excretion continues for three to four days after a dose, the greater part is recovered in the first ten to twenty hours. Thus to produce any continued concentration in the blood or tissues, the doses must be large and frequent.

In considering the possible toxic effect of large doses, experimental work points to the kidneys as the organs most likely to suffer damage. Hanzlik[14] has shown that such doses produce severe nephritis, often fatal, in animals; and that ordinary therapeutic doses caused the almost constant appearance of casts, leucocytes and albumin in humans. No serious effects were observed, but the albuminuria persisted for some time in a few cases. I have seen rabbits, and especially cats, develop fatal nephritis from moderate doses. In spite of these findings, we have never seen a clinical case of human nephritis develop during salicylat therapy.

In some obstinate cases of uveitis, the congestion returns as soon as the drug is stopped, so that we often give sixty to ninety grains a day for periods of two to six months or even longer. One case of sympathetic ophthalmia has taken three hundred to four hundred grains of sodium salicylat per week for the past seven months, and is in perfect health. Another case of sympathetic ophthalmia developed scarlet fever, but the large doses were continued with no evident damage to the kidneys. Clinical experience, therefore, leads us to believe that these urinary changes, which are unquestionably found, if looked for, are temporary and usually of no consequence. It would seem prudent, however, to examine the urine of all cases before starting the drug, and if albumin is already present, to choose a drug less likely to harm the kidneys.

Clinicians still differ as to the use of sodium bicarbonat to prevent toxic symptoms. Ehrmann found that its only effect was to increase the rapidity with which the salicyl was eliminated, which would tend to lessen the effectiveness of the drug. Hanzlik found no such effect, nor any effect in lessening renal irritation. We have found it of no value in lessening gastric disturbances from sodium sayicylat, which is to be expected, as this is a neutral salt. Cincophen and acetylsalicylic acid, however, it probably helps convert to the less irritating salts. We do not use it with sodium salicylat, but do with cincophen.

As to the more generally known toxic symptoms, ringing in ears, slight nausea, and malaise occur fairly often, but are no indication for stopping the drug if it is still needed. Depressing effects on the heart may occur, but usually only with enormous doses, and their importance has been overemphasized, especially for aspirin, which is only slightly more toxic than sodium salicylat. I have never seen cardiac decompensation result from either

drug. Occasionally delirium follows large doses, and it may be alarming. Such cases are rare, however, and usually depend on contributing circumstances. They should be watched for, especially in extreme old age.

If vomiting occurs, rectal may be substituted for oral administration. Sixty grains of sodium salicylat may be given by high enema two to three times a day, and this is usually well absorbed. Recently, instead of this, I have been substituting cincophen or atophan for the salicylates. Cincophen, and its derivative, neocincophen, appear to offer almost perfect substitutes for the salicylates, where for any reason these cannot be given. Cincophen is phenyl cinchoninic acid. Atophan is the trade name originally applied to the same product, because of its supposed effect on gouty tophi. Neocincophen is the methyl derivative of cincophen. Chemically, these drugs are not very close to the salicylates, but pharmacologically their effects are almost identical. Hanzlik and Scott[15] have investigated the effects of these drugs in rheumatic fever. They found both as efficient as the salicylates in lowering fever and stopping pain, tho larger doses of neocincophen were required. The urinary changes after cincophen were much less marked than with the salicylates, and still less marked after neocincophen. Other toxic symptoms similar to those after the salicylates were observed, but these were seldom severe. Epigastric pain was a symptom peculiar to cincophen patients. Chace, Killian and Myers[16] found toxic symtoms much less marked than with the salicylates.

I can attest to the occurrence of epigastric pain after cincophen, tho it was never severe, and in my experience nausea has been much less frequent than with the salicylates, and vomiting has not occurred once. Patients whose stomachs will not tolerate salicylates, usually take cincophen with little or no discomfort. Besides this, I have seen a number of cases of iridocyclitis which failed to respond to large doses of sodium salicylates, but which cleared up promptly on cincophen. I am at present seeing two such cases, whose congestion returns in about forty-eight hours after cincophen is stopped, but disappears at once as soon as it is resumed in small doses. (30 grains a day.)

As to the dosage, Hanzlik gave 150 to 195 grains of cincophen, and 165 to 240 grains of neocincophen before results were obtained. Chace, Killian and Myers gave 50 to 100, and in one case 200 grains of neocincophen daily, without marked toxic symptoms. I start on 100 grains in severe cases, (80 in less severe) and cut down after two or three days to 80 and then 60 grains a day. It seems best, usually, to keep up doses of 30 to 45 grains a day for some time after the eye is quiet. The principal objection to these drugs is their price. Chiefly for this reason, sodium salicylat is usually used where it is well borne. If the usual one grain per pound per day is not effective, it should be pushed to 175 or 200 grains a day, and this will often bring a prompt response.

In using one of these drugs, in nearly all cases of nonspecific iritis, iridocyclitis, and optic neuritis, congestion after cataract extraction, and of course sympathetic ophthalmia, the causes of these conditions are not lost sight of, and are eliminated as soon as found. The drugs are of immense service in these cases, however, by lessening the reaction and preventing permanent inflammatory changes until the effect of causal treatment can be secured.

Some laboratory work undertaken this year is far from finished, and has proven nothing definite as to the action of the salicylates. It has, however, brought out some facts as to the occurrence of salicylat in the eyes, which I had not previously known. Whitham[17], in 1913, experimented on the occurrence of salicyl in the aqueous, after the injection of several salicylat derivatives. Tests for salicyl could be obtained in the aqueous of rabbits 4 to 6 hours after the drugs were given by mouth. The strongest tests were given with urotropinsalicylat after which formalin was also found in the aqueous. A slight increase in the amount of salicyl was

noted after hot packs were applied, more after a previous paracentesis, and a considerably greater increase after drops of 10 per cent dionin and subconjunctival injections of salt solutions. Aqueous obtained in one of these tests apparently inhibited the growth of pneumococci in the test tube. Whitham's estimations of the amount of salicyl were not quantitative but only comparative.

Working with the quantitative method of Hanzlik, I attempted to find whether any greater concentration of salicyl was present in an inflamed than in a normal eye, and whether free salicylic acid was present in either. Sodium salicylat was fed to rabbits and cats by stomach tube, and one eye was injected with a virulent culture of staphylococcus. The aqueous of each eye was tested from time to time, and finally the animals were sacrificed, each eye extracted and the salicyl estimated. The amounts present in the blood were also estimated at as nearly as possible the time when the other specimens were obtained. No free salicylic acid was ever obtained from either inflamed or normal eyes. No greater concentration of salicyl was found in the inflamed than in the normal eyes. In fact, in the few experiments which were completed, the reverse was true.

It was interesting to know the rapidity with which salicyl appeared in the aqueous after a dose of sodium salicylat by stomach tube. It was detected once in twenty-five minutes and usually in thirty-five to forty-five minutes. After forty minutes, enough was usually present to be estimated quantitatively. No important differences were noted in this respect between cats and rabbits. After a dose of 15 grains to a rabbit, salicyl could be detected in the aqueous after twenty hours, but not after twenty-four hours.

In two animals, the various parts of the eye were separated, weighed, and extracted separately. In both cases, most of the salicyl was found in the aqueous and vitreous, there being none in the lens, and only a small amount in the uveal tract and in the corneoscleral coat. Concentration in the aqueous and vitreous were about the same. In one human case, getting ordinary doses of sodium salicylat, I obtained a very strong test for salicyl with the aqueous. In another case, tests were negative on two occasions.

In animals, the concentration in the aqueous, after repeated doses, reached 1:3600 to 1:1250. In the whole eye by weight, it reached 1:5900 to 1:4100. In the one rabbit whose aqueous showed salicyl in a strength of 1:1250, the concentration in the pericardial fluid was 1:5000, while it was only 1:17,500 in the blood. In four other rabbits and one cat, there was also noted a greater concentration in the aqueous than in the blood, and in two of these, the difference was very marked. These results were unexpected and are not in agreement with the work of others on joint fluid. But an accumulation of the drug in a relatively stagnant serous cavity from the circulating blood, is not unthinkable. (I would like to have the opinion of someone who knows all about the physiology of the intraocular fluids as to this possibility.)

It was found that the method used for extracting salicyl from such small amounts of blood and tissues involved considerable loss, and Dr. A. L. Rubnitz and I are now working out what we hope may be a more accurate method. Such large differences as were observed in a few cases, however, can hardly be ascribed to the method. And the fact that such concentrations of salicyl can be obtained in the eye, even if they can never be bactericidal, may help to make more intelligible whatever effect the drugs do have. From present indications, it would seem that their action will be found to involve some of the intimate facts of metabolism, altho their vasomotor effect is also to be remembered. In any event, the salicylates, together with cincophen and neocincophen, are practically unique in their effect on local inflammation, so that they may be called the antiphlogistic drugs par excellence.

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OCULAR MANIFESTATIONS IN A CASE OF HYPOPHYSEAL SYPHILIS.

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In this case, with marked Fröhlich's syndrome and abnormal sugar tolerance, there was marked choking of the discs and contraction of the visual fields. Wassermann reactions were negative, and no cause was discovered for the ocular condition. Decompression to save the sight showed no intracranial pressure. Prolonged thyroid and pituitary feeding were attended with improvement of vision. Fluid from the ventricles gave a Wassermann "4 plus". Antisyphilitic treatment was pushed, and brought the eyes to normal. Read before the American Ophthalmological Society, May 1922.

The clinical aspect of a case of hypophyseal disease with primary or neighborhood syphilitic manifestations is here reported, mainly on account of the comparative infrequency of the complication, and the difficulties encountered in arriving at a definite conclusion.

Cases of acquired or congenital syphilis of the hypophysis are mentioned in the literature of neurosurgery, and obviously most of those cases were found, or at least the clinical diagnosis confirmed, by autopsy. De Schweinitz's recent article upon a similar topic reports much of the recent literature, to which the reader is referred.

History. An unmarried woman, age 24, was first seen April, 1921, with defective vision as the principal complaint, which dated back about two months. There were other important points in the history, which should be here recorded: (1) an increase of weight, that is a gain from 190 pounds at the age of 18, to the present weight of 255 pounds; (2) polyuria, as long as she could remember; (3) polydipsia since childhood; (4) bitemporal headaches; (5) irregular and scant menstruation for five years, at which time she began to put on excessive weight; and (6) anaphrodisia.

The other important extracts from the history are taken from the careful notes made by Doctor Chas. E. Dowman and Doctor J. E. Paullin, consultants in the case.

Family history was negative for tuberculosis, cancer and neurologic diseases. The father, mother and five brothers were living and well. Two children died in infancy. The mother miscarried at a four months' pregnancy.

Except for diseases of childhood, the patient's health was always good. There was a history of scarlet fever, complicated with a right otitis media, which permanently impaired the hearing. Five years ago she had fainting

spells, and in one attack she was unconscious many hours. About this time she was knocked down by a train, but there was no head injury or unconsciousness. She finished high school at 16 years, since which time she has worked with her father in a railroad ticket office.

Physical Examination. The patient was a very stout young woman. There was an abundance of subcutaneous fat about the arms, neck, chest, legs and abdomen. The skin was dry and coarse. There was an absence of hair in the axillæ, but a good supply on the head and pubis. The hands were large, the fingers tapered, and there were large crescents on the nails. The teeth were good, with marked spacing between the two upper middle incisors.

The cranial nerves were normal except the optic (see eye examination). There was no disturbance in the functions of the cerebrum or cerebellum, and all reflexes, both superficial and deep, were negative. The thyroid gland was not palpable. The heart and lungs were normal. The blood pressure was 134.

The urine was negative. The blood was normal. The blood and spinal Wassermanns were negative. The blood sugar response after the administraton of 125 grams of glucose was as follows:

Fasting blood sugar.....	0.140%
1/2 hour after glucose.....	0.210%
1 hour after glucose.....	0.220%
1 1/2 hours after glucose.....	0.220%
2 hours after glucose.....	0.180%
2 1/2 hours after glucose.....	0.160%

The urine voided one hour afterward contained a faint trace of sugar, and the urine voided 1 1/2 hours afterward contained a faint trace of sugar. All other specimens were negative. (Paullin.)

The nose and sinuses were negative for infections. The right ear drum was contracted, and scar tissue was present. The tonsils had been cleanly removed. An X-ray examination showed a box shaped sella, measuring 14x14x14 mm., with apparently no bone erosion.

Eye Examination. Vision right 20/50, left 20/40, unimproved. The external appearance of the eyes was normal; the motility was good and there was no diplopia. The pupils were of normal size, and reacted normally to the usual stimuli. The media were clear. The right disc showed a swelling of 5 D.; there were a few splotches of retinal hemorrhages above the disc, and a few yellowish dots arranged in radiating lines in the macular region. The veins were greatly engorged and tortuous, while the arteries were of normal size. The choroid and retina did not show any abnormal pigmentation suggestive of congenital syphilis.

The left disc was likewise swollen, measuring 3 D., and the veins were engorged. The retina was free of hemorrhages, exudates or pigmentation.

The fields showed marked peripheral contraction for form, within 20 degrees, with central relative scotomata for colors. (See Fig. 1.) The blind spots were slightly enlarged.

Course. It was agreed that there was definite clinical evidence of an hypophyseal disturbance (dystrophia adiposa genitalis) without hemianopsia, and on account of the choked discs, a subtemporal decompression was at least advisable to preserve vision. This operation was performed April 19, 1920, by Dr. D. under local anesthesia, without discomfort to the patient. The brain was not unduly tense, and there was nothing unusual in the exposed area. A small amount of fluid from the right ventricle was withdrawn under no pressure. The fluid showed a slight increase in globulin, with a cell count of 140 per cubic mm. A specimen for a Wassermann was lost.

Recovery from the operation was prompt, and vision improved, but the bitemporal headaches persisted. Glandular feeding (alternate doses of thyroid and pituitary gland) was given for two months, at the end of which time no change was noted in her symptoms, except the continued improvement in vision, fields and the appearance of the disc. In September, a

mild attack of plastic iritis developed in the right eye, which was treated locally in the usual way, with the addition of the iodides internally and mercurial rubs. In two weeks all symptoms had subsided. The papill-edema had subsided considerably, but the spoke like exudates in the macular region of the right eye had increased to a full star, and the left eye was now similarly affected.

Cerebral syphilis, until the attack of iritis, had not been suspected on account of negative Wassermanns, but with this recent information at hand, a final opinion was expressed that there was a probable syphilitic lesion involving the hypophysis, and accordingly appropriate treatment was pushed to toleration, including four injections of salvarsan. Within a reasonable time the headache subsided, there

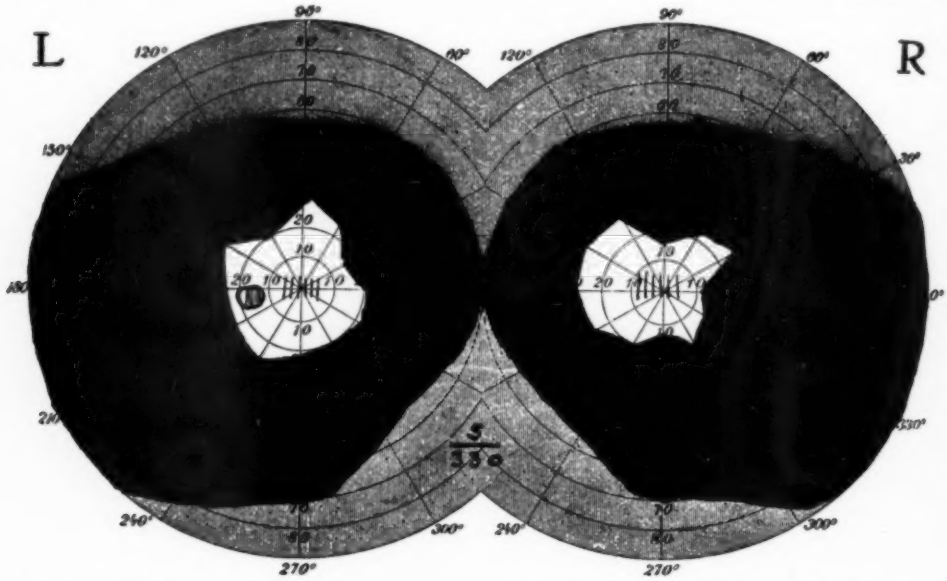

Fig. 1. Fields showing marked peripheral contraction for form, central relative scotoma for colors and a slightly enlarged blind spot in the left eye.

In as much as there had been no material benefit or improvement in her condition, with the exception of vision (and there still remained a considerable swelling of both dicsc), the patient was advised to return to the hospital for another general and neurologic examination, including a vestibular stimulation. No new evidence was thereby gained. To definitely exclude a cerebral tumor, 35 cc. of ventricular fluid was drawn from the right ventricle under fair pressure, and 30 cc. of air replaced. A ventriculography failed to show any filling defect of any of the ventricles in any position. From this study, a cerebral tumor was excluded. This ventricular fluid showed a Wassermann ++++, normal globulin, no glucose reduction and a normal cell count.

was a decided reduction in weight, and the vision and fundus picture had returned to normal, except for some tissue changes in the disc which one would expect in prolonged edema.

The patient has been seen at intervals, even recently, and her condition is excellent, in that she is free of headaches and the eyes are normal; but the polyuria persists and the menses are still scant and most irregular, and her weight has increased to 261 pounds.

Comment. It is manifestly a matter of diagnostic speculation to definitely describe and locate the lesion which would have produced the chain of symptoms, including the eye complications. But in reviewing the history, one must be impressed with three outstanding facts: (1) an acute condition within the skull, made known by cer-

tain optic nerve changes indicative of intracranial pressure; (2) a chronic process or an impaired function of the hypophysis, evidenced by objective signs and a fairly typical history of hypopituitarism; (3) laboratory evidence and a clinical sign (iritis) of syphilis.

On account of the prominent feature of an hypophyseal disturbance, it was only natural to associate the cause of the papilledema with some lesion within proximity to that gland, and as facts developed, that lesion unquestionably was syphilitic. I know of no means to decide whether this infection was congenital or acquired. There were no congenital stigmata, including the absence of chorioretinal changes frequently seen in congenital syphilis, and if the infection was acquired, it probably was extragenitally contracted in childhood.

In the establishment of a diagnosis then, two working hypotheses may be considered; (1) that the pituitary gland was primarily syphilitic, and the acute symptoms were manifestations of a breaking down or gummatous process; (2) the gland already in a state of hypofunction, was secondarily involved by a localized exudation, with the formation of neighborhood gummy tumors, or as Starr expresses it, "a chronic syphilitic hyperplastic inflammation with cellular infiltration of the meninges."

In favor of the idea of a primary glandular involvement, to which I am inclined, one could readily assume that the growth, having reached large proportions from a "breaking down process," blocked the foramina of Monroe, and the distended lateral ventricles, with choked discs as a sign of increased cerebral pressure, were natural consequences.

Cushing[2] mentions a case diagnosed clinically as cerebral syphilis, with polyuria and polydipsia as prominent symptoms, which improved under the iodides. The same author likewise reports another instructive case of unsuspected gumma of the hypophysis found by autopsy, with glycosuria and polyuria and early choked disc as the prominent symptoms.

The abnormal sugar tolerance of this case, while unusual for true types of hypopituitary disorders, is not at variance with the diagnosis, according to the following explanation and opinion of Dr. Paullin:

"The patient very definitely shows an abnormal tolerance for glucose; and perhaps an abnormal carbohydrate metabolism. While it is not suggestive of a pituitary disorder, at the same time it is not completely negative evidence that such a disorder does exist. It is entirely possible that the pituitary disease having existed for the length of time that it has, has caused other glands to furnish evidence of disordered secretion, and this perhaps is the reason why we have in this patient an abnormal curve, such as is exhibited. I believe that there is not only a disorder of the pituitary, but also of the thyroid and perhaps the ovary as well."

One would hardly expect the complete disappearance of those symptoms comprising Fröhlich's syndrome, which were caused by structural changes of many years duration within the hypophysis, and which alteration, as has been intimated, affected many of the other ductless glands of the body.

[The patient has developed (June 5, 1922) a second attack of low grade serous cyclitis in the right eye. Under rigid antiluetic treatment it rapidly cleared. There have also been several fainting spells; but aside from these complications, there has been no definite change in the general symptoms.]

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HYPOPHYSEAL DISEASE PROBABLY OF SYPHILITIC ORIGIN.

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The case here reported gave a negative history and repeatedly negative Wassermann reactions, but showed striking improvement on antiluetic treatment. During its course, it showed increasing evidence of hypophyseal disease. Read before the American Ophthalmological Society, May, 1922.

The ever doubtful diagnosis of intracranial disease, and yet often too certain conclusions arrived at thru clinical and laboratory tests, furnishes always a fascinating study to those interested in differential diagnosis, and in ferreting out important data relating to an individual case. With this in mind, but especially because it presents certain important studies just now being entered upon by numerous observers in other and broader channels of research than ours, I beg leave to relate the following case report:

G. T., (Hosp. No. 30863), aged 19, came to the clinic of Dr. W. E. Lambert, New York Eye and Ear Infirmary, August 16th, 1920, complaining of diplopia, left convergence, greatly reduced vision in the left eye, intense constant headache, and nausea with frequent vomiting.

Present Illness.—Two months prior to admission he had noted diplopia from time to time, coming on with headache, dizziness and nausea, and vision cloudy, especially in the left eye. These attacks, which at first he regarded as "bilious," had become more frequent, when about two weeks before, nausea was persistent, headache and dizziness gradually becoming constant, progressing to such severity, that together with marked diplopia and loss of vision especially in the left eye, he was rendered incapable of work. He had lost no weight, in fact had been in excellent health, was not sure but that he had gained in weight recently. His appetite had been good, but the nausea and headache led him to believe that his stomach was at fault, and he had therefore sought aid at the hands of his family physician. Other symptoms indicating cardiac, kidney or pulmonary disturbance had not been present.

His mother had noted that he had become very drowsy at times, especially during the past two weeks, sleeping for short periods during the day, awaking with intense headache and dizziness, and apparently not refreshed, would sleep only at intervals during the night. When awake he appeared "stupid" or "exhausted" at times, she did not know which, but certainly he was entirely unlike himself. During the past two days, he had suffered unbearable pain.

Previous History.—The patient has always been strong and well, severe type of measles when ten years of age being the only illness of childhood. He denies gonorrhea and syphilis, insisting he has never had a chancre or "sore" of any kind, the only skin eruption being that of measles nine years before, at which time he was very ill and received fairly prolonged treatment. He has been a steam mechanic by trade for past four years. Married five months before. He has not used alcohol; has indulged in tobacco but very moderately; tea and coffee not to excess. His father and mother are living and well, one sister eighteen years old in good health. No family medical history of any importance.

Physical Examination.—The patient appeared in excellent physical condition, color good, no excess fat, but strong and muscular in build, well proportioned, and weighing 176 lbs., 5 ft. 11 3/4 inches tall; skin normally warm and moist, normal axillary and pubic hair; genitalia normal; patella reflexes normal.

Ocular Examination.—Vision of the right eye = 20/30, unimproved; of the left eye = 10/200 (eccentric), unimproved. The refractive error was that of very moderate hypermetropia in each eye.

There was marked paralytic convergence of the left eye, measuring 25 degrees; outward motility limited but not entirely lost, five to ten degrees remaining. Vertical rotation was unaffected,

paralysis of the external rectus of the left eye being definitely present. Motility of the right eye was normal. There was no exophthalmos; no nystagmus.

The lids were normal; no conjunctival reaction; cornea normal; pupils slightly unequal, the right 3 1/2 mm., left 4 mm. and slightly oval in vertical meridian, both responding to light and convergence, the left not so promptly as the right.

The *ophthalmoscope* revealed in the right eye normally clear media, choking of the disc with an elevation of 6 diopters, the usual vessel changes of engorgement and tortuosity, only a few small feathery hemorrhages about the papilla, no splashes or drop like hemorrhages, no white spots, no pigmentation, no detectable macula change. The media of the left eye contained many fine dust like particles, the disc choked to an elevation of seven diopters, numerous small fresh retinal hemorrhages about the papilla, very moderate edema of the retina, the papillomacular region presenting several small exudative areas of deep involvement with a piling up of exudate, little or no pigment visible, giving the unmistakable picture of a typical retinochoroiditis of the low grade exudative type. No drop like hemorrhages, no extensive retinal splashes, no old or partly absorbed hemorrhagic areas, no pigmented spots. The retinochoroiditis appeared as tho it were separate and apart from the nerve involvement.

Fields of vision were found to be normal in the right eye for form and color, 10 degrees of concentric contraction in the left eye for form and color. Blind spots were enlarged, the left irregularly and larger than the right.

Further investigation led to the following reports: The urine was normal, except for a moderate indican reaction. Two blood Wassermann tests made in different laboratories were reported negative, with both alcohol and cholesterin antigen. No blood sugar tests were made at this time. X-ray examination, made August 17th, 1920, (day after admission to Infirmary), was reported by Dr. George Dixon as follows: "Large frontals, right larger than left and both cloudy; ethmoids cloudy, especially right side; antra clear; septum straight; sphenoid large and cloudy; sella about 157 sq. mm. (uncorrected); clinoids normal." The intranasal examination proved to be negative in every detail. He was referred for a neurologic examination, the report from which stated the diagnosis: "brain tumor, operation probably inadvisable."

With this data at hand, it was decided, in view of the negative intranasal examination, but in spite of the X-ray of cloudy sinuses and negative Wassermann report, to administer mixed treatment in large doses and to observe carefully the effect, repeated intranasal examination being made from time to time. In the course of four days, there was noticeable improvement; especially was the headache noticeably relieved. Mercury inunctions were then added to the treatment, and neoarsphenamine intravenously. At the end of ten days marked improvement was evident. At the end of two weeks, he was almost entirely free of headache, the abducens palsy had improved, and in another week there were very definite curative changes in the fundus picture of each eye. Since that time to the present date, this treatment has been continued—courses of mercurial inunctions, and potass. iodid, as have seemed fitting to saturation, Fowler's solution, and neoarsphenamine intravenously have been administered. The effect of the treatment was not only prompt, but it has been continuously effective.

At the end of five weeks' intensive treatment, both nerveheads receded to a marked degree, hemorrhages had absorbed, exudative retinochoroiditis had subsided, vision in right eye = 20/30, left eye = 20/70-1. He returned to his previous occupation during the month of October, 1920, (two months after his admission to the hospital), and has been at work quite regularly since that time. On one occasion he discontinued his treatment for a time, and there was an early return of that intolerable headache, dizziness and nausea, which, however, promptly responded to rigid treatment. Repeated blood Wassermann tests have been negative, and two spinal Wassermann tests revealed nothing positive. October 16th, 1920, (two months after his admission to hospital) his wife gave birth to a seven months baby, apparently in good health.

During the five months that followed,

he was reasonably free of symptoms, but it was observed that he was showing signs of excessive growth, his features, hands and feet were noticeably becoming larger, his arms longer, and his height rapidly increasing. These observations led to an X-ray examination on January 17th, 1921, which was reported as follows: "Sinuses as before stated in previous X-ray report, but now the sella is enlarged to 272 sq. mm. (uncorrected) with some erosion. Diagnosis—tumor of hypophysis." Further investigation revealed nothing new in the case.

In April, 1921, (8 months after his first appearance), he had grown 3 1/4 inches in height, now 6 feet 3 inches tall; his features, hands and feet greatly enlarged; his weight increased from 180 lbs. to 225 lbs. (gain of 45 lbs.); his mentality showed signs of waning intelligence, his memory slow and uncertain—typically acromegalic. Vision of the right eye = 20/30, of the left eye = 20/70-1. Fields of vision showed slight concentric contraction to form and color in the right eye, marked concentric contraction, 30 degrees to form and color, in the left eye, no sloping of form or color fields on the temporal side in either eye; as the charts presented indicate. Mariotte's blind spots were enlarged, as shown in the charts presented.

A blood Wassermann test made by Dr. H. R. Geyelin at that time (May 4th, 1921) was negative both to alcohol and cholesterin antigen. The blood count was as follows:

HMB: 75% Talquist and Sahli.

RBC: 5,800,000.

WBC: 9,400.

Differential Count was unimportant.

Misc. Red blood cells morphologically normal, very slight central pallor.

Blood Sugar: before glucose, .135%.

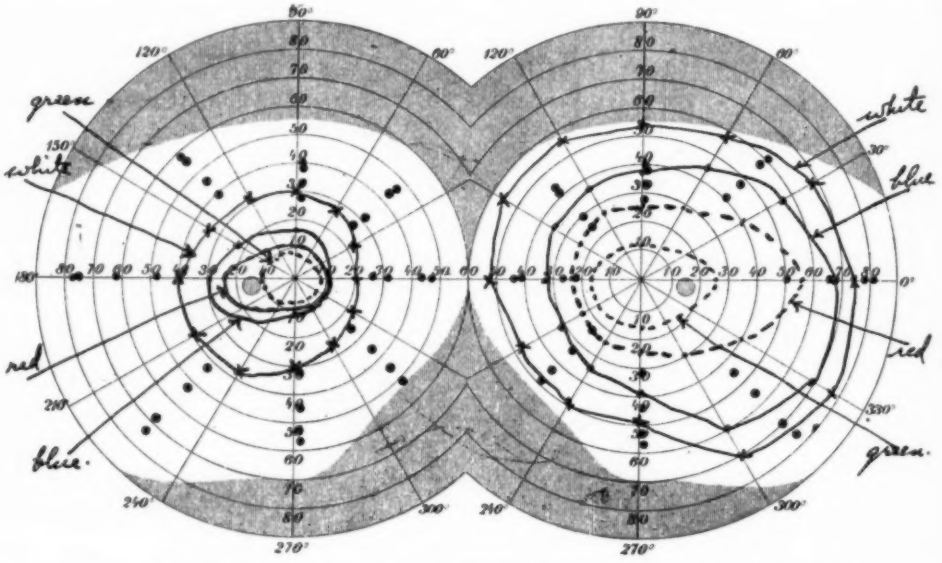

Fig. 1. Fields of vision April 15, 1921 showing contraction principally of the left.

Blood Sugar: 1 hr. after glucose, .160%.

Blood Sugar: 2 hrs. after glucose, .140%.

Urine before glucose; Sugar, none; diacetic acid, none.

Urine 2 hrs. after glucose: Sugar: none; diacetic acid, none.

At the present time, one year since the above observations and tests were made (18 months since his admission to Infirmary), he is at work, he has grown an inch in height (now 6 feet 4 1/4 inches), and has gained 15 lbs. (now 240 lbs.). His memory is slow and uncertain. There is now a slight secondary divergence of the left eye, 10 degrees; pupils slightly oval, the left a trifle larger than the right; both respond very sluggishly to light, but fairly well to convergence. The fundus picture is that of secondary

atrophy, partial in the right, more advanced in the left, both discs entirely free of swelling and edema; the retinochoroiditis resolved, an irregular, moth eaten appearance in the macula region of the left eye. Vision of the right eye is 20/30-2; of the left eye 20/100. Fields of vision, April 25th, 1922, are similar to those found a year ago, except there is greater concentric contraction, the right contracted 15 to 30 degrees for form and color with some evidence of greater contraction for white on the temporal side, but no quadrant color anopsia; the left contracted to 10 degrees about the point of fixation, red and blue being maintained but green no longer detected, as the charts indicate. The blind spots are only slightly altered as compared with those delimited a year ago. No scotoma was found at any time.

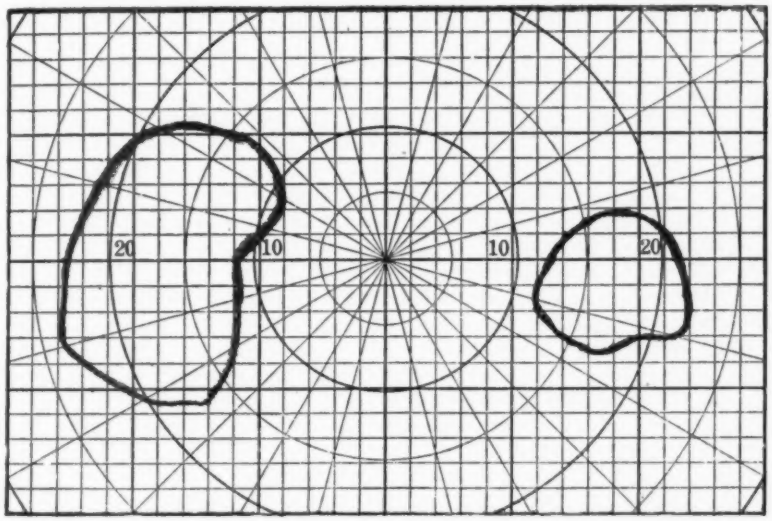

Fig. 2. Blind spots as taken April 20, 1921. Test object 1 cm. at 60 inches

X-ray examination (April 22nd, 1922) reveals the following: "Erosion of the sella evidently progressing. The greater portion of the dorsum posteriorly, beginning about the middle, has disappeared, and the posterior clinoids are also disappearing. The cavity measures at present 350 sq. mm., uncorrected. Diagnosis: tumor of the hypophysis."

Blood sugar tests at this time are very similar to those reported a year ago, indicating a very slightly low sugar tolerance.

For the past twenty months, he has been almost constantly under antisyphilitic treatment, no glandular therapy being attempted. During this time, he has taken 185 grs. of mercury; 18000 grs. of potass. iodid.; and 22 neoarsphenamine injections intravenously. His tolerance to mercury and K. I. was quite remarkable, large quantities being necessary to produce symptoms of saturation.

Comment.—It is hardly necessary to state, I think, that during the first few months of treatment and observation of this case, a positive diagnosis was made of syphiloma of pituitary. But in the face of an apparently negative history, persistently negative Wassermann tests, negative spinal fluid, the birth of a healthy child 7 months after marriage and two months after his admission to the hospital, with later development of acromegalic gigantism and X-ray findings of progressive enlargement of the sella, the following questions naturally arises: Is this a case of pituitary syphilis? If so, hereditary or acquired? If not, is the pituitary involvement secondary to a basilar syphilis, or may the whole picture be merely one of tumor (cyst or neoplasm) of the hypophysis with unusual symtomatology? Further differential diagnosis than this does not appear reasonable at this time.

There is no evidence in the history to indicate acquired syphilis, unless perhaps the socalled unusual attack of measles nine years previously may be significant

in this regard, but which of itself can not be relied upon for positive diagnostic purpose. Furthermore, syphilis of the gland is uncommon in acquired lues. Henschae and Nager mention only one case of acromegaly from this type of pituitary disease. Cushing relates a case, No. XLVII of his series reported in 1912, of syphiloma of the hypophysis with glycosuria and polyuria, diagnosed as diabetes mellitus, occurring in a man 32 years of age, whose history and symptoms are almost precisely those

On the other hand can tumors of the gland, regardless of lues, be held accountable for the symptoms and progress of this case? Certainly the character of the symptoms, the choked disc, the X-ray findings, the negative Wassermann and spinal fluid, all would indicate such a diagnosis. But on the contrary, it does not explain the retinochoroiditis, external rectus palsy (uncommon in pituitary tumor), early lethargy (almost pathognomonic in syphilis of the pituitary according to Walter Timme), the

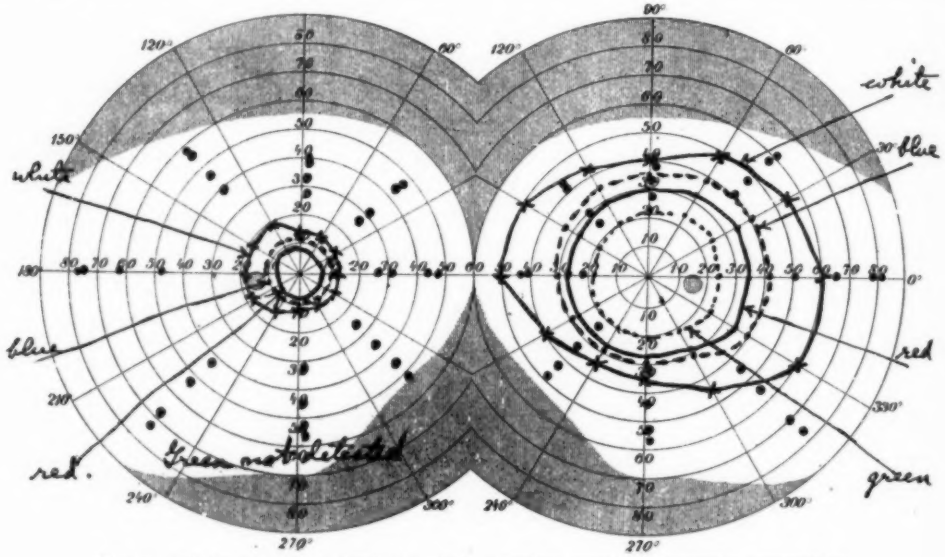

Fig. 3. Fields of vision April 25, 1922 showing greater concentric contraction.

of the case I have just presented, except that his case did not develop acromegaly. Given the unmistakable symptoms and signs of intracranial hypertension, which I have related above, its close resemblance to that of Cushing's case (which was operated upon and a syphiloma of the pituitary disclosed), and the prompt and continuous response to antisyphilitic treatment does undoubtedly throw suspicion upon the unusually severe attack of measles which required prolonged treatment, all of which points toward acquired lues, gumma of the pituitary.

Assuming that syphilis was the primary lesion affecting the gland, it seems reasonable to conclude that enlargement with erosion of the sella could readily follow, resulting from circulatory or other effect upon the hypophysis (hypertrophy or cystic formation).

tolerance to K.I. and mercury, and finally the prompt and continuous response to antisyphilitic treatment over a period of twenty months, with complete subsidence of marked choked disc in each eye. It is difficult for me to appreciate how an ocular condition, such as this man presented, could have been due to mechanical pressure from a new growth, and could have been relieved as it has been demonstrated by antiluetic treatment, notwithstanding our theories and experience as to the nonspecific effect of mercurilization, whether as an antiphlogistic, or an inflammatory antagonist, or as a glandular stimulant simply, or in the development of a synergistic action.

If it is true that to obtain a complete picture of a subject it is necessary to study its *frustes*, I hope the opportunity will be afforded.

A CONSIDERATION OF CATARACT PROCEDURES.

WILLIAM F. HARDY, M.D.

ST. LOUIS, MO.

Points in the erformance of cataract operations are here considered from the writer's point of view. The prevention of infections, preliminary iridectomy, immature cataract, expression of the lens in the capsule as done by Col. Smith, needling, linear extraction and traumatic cataract are discussed. Read before the St. Louis Ophthalmic Society, May 5th, 1922.

While the foregoing is a hackneyed subject, it is not a finished one. Were it so, it would not figure so largely in ophthalmic literature. The end of innovations and modifications has not yet been reached. Out of the mass of cataract literature, a few truths may now and then be gleaned. The trend of affairs is towards a simplification of methods and technic. A brief review may then be in order. No new fact or idea is presented, the subject being brought forward simply to provoke free discussion.

PREVENTION OF INFECTIONS.

In the preaseptic days, mistakes were made thru ignorance of essential causes. In latter days, possibly too great stress has been laid on the necessity of obtaining absolutely sterile cultures from the conjunctiva before operation. All know the utter impossibility of sterilizing a mucous membrane. In the presence of certain bacteria, operation is positively prohibited. This has been learned by experience. The existence of a few colonies of staphylococcus albus has delayed many an operation for a long time, often needlessly. In this respect, the observations of Bell and of Verhoeff have done considerable in dissipating our fear of the staphylococcus albus, and other organisms of no greater virulency. The procedure of Bell, while possibly more effective, is less agreeable. 1% $Ag.NO_3$ solution produces a marked reaction and much discomfort. The reaction is beneficial in that it increases the leucocytic content of the conjunctiva. The leucocytes and antibodies are the real barriers to infection. The use of 5% protargol in NaCl. solution has been used by Verhoeff with satisfaction. It is much less irritating and probably also less effective than 1% Ag.

In spite of sterile cultures and clinically clean conjunctiva, infection may take place; hence, it might be well to employ the method of Bell or of Verhoeff as routine. Most infections are exogenous but some are endogenous. Against the latter, all local measures are ineffective. Bell recognizes this in the advocacy of his three T's—teeth, tonsils and toxemia. A purulent nose, juicy tonsils, foul mouth, or any other obvious focus of possible infection, should be cleaned up before operation, even if they may have no bearing on the progress of the case. The height of the blood pressure and condition of the urine must be known, to obviate complications and embarrassing situations. If possible, operation in a diabetic should be done only when the patient is sugar free. High blood pressure must be controlled by purging, drugs, rest and diet, or, if need be, by bleeding the patient shortly before operation. The combination of arteriosclerosis, high blood pressure and operation, may result in intraocular hemorrhage and loss of the eye.

Likewise, it would be well to know the result of the Wassermann test on every prospective cataract case. Trauma may excite a violent luetic inflammation in a predisposed eye, and why not, therefore, operative trauma? In fact, it does. Traumatic interstitial keratitis is mentioned by Knapp, and in some instances, it has been an issue in medicolegal cases. I have had a case of interstitial keratitis following cataract extraction in a known syphilitic. The first eye was operated upon by Dr. Ewing, who did an unintentional extraction in the capsule. The same thing occurred with me in the second eye. A minimum of trauma was inflicted, yet four weeks after the operation, a keratitis began which ran the typical clinical course of an interstitial

keratitis. Does the trauma incident to the operation cause the various uveal inflammations so often observed? Do such follow operation in a perfectly healthy and sound individual?

In general, the younger the patient, the better the response of his tissues, ocular and other. Babies make astonishing recoveries from illnesses, because they, as a rule, have but one ailment at a time, whereas the adult and particularly the aged, in whom cataract is most frequent, seldom have a single ailment, but a complexity of diseases (cardio-vascular-renal, for example). May not many of the complications of cataract be, therefore, due to hidden or latent infections? Is it presuming too much to say that a stubborn iritis or iridocyclitis following operation may find its explanation in a dental, nasal, tonsillar, tuberculous, luetic or other focus?

Important among the subjects entering into a discussion of cataract is:

PRELIMINARY IRIDECTOMY.

The majority of operators do not favor preliminary iridectomy, giving as their reasons (1) that the patient is subjected to two operations, with two stays in the hospital; (2) that the danger of infection is doubled. The fact of the matter is, that the operator raises these objections in his own mind much oftener than does the patient. If an ophthalmologist is thoroly convinced that a certain line of action is the correct one, he will have little trouble in putting that conviction over to the patient and gaining his consent. The patient knows little about the danger of infection; he knows much about the time he is incapacitated and the cost incurred, but everything sinks into significance when weighed against the possibility of the best result.

The first objection is true, two trips to the hospital are necessary, but the sum total of the time spent thereby is hardly more than the stay necessitated by a one step operation. The danger of infection is not doubled by a two step operation. If the same preliminary and operative care is exercised in both procedures, the danger of infection is reduced to a minimum. In fact, it is my belief that the danger is no greater than in the one step operation, for the following reasons: (1) The probability of infection from an iridectomy is very slight, as witness the great number of successful iridectomies done in the preantiseptic and preaseptic days. (2) In addition, all are familiar with the many cases of penetrating wounds of the cornea at or near the limbus, with prolapse of iris, followed or not by an iridectomy, in which instances the eye healed perfectly with no sign of infection. (3) The aqueous, as soon as the eye is opened, changes its nature and becomes flooded with antibodies. (4) An iridectomy gives a good idea as to how the patient will behave and the eye react. Furthermore, at the extraction, the entanglement of the point of the Graefe knife in the iris is obviated and no bleeding into the anterior chamber from a freshly cut iris is present to interfere with a capsulotomy or capsulectomy. (5) The tonic effect on the eye from an iridectomy seems to be good and the reaction is inconsiderable. (6) In a one step operation, the trauma is cumulative and the reaction likewise cumulative. Preliminary iridectomy is especially desirable in immature cataract, the maturation being somewhat hastened thereby.

Most operators use atropin systematically after cataract extraction. Much of this is the result of habit and training.. Undoubtedly, it is many times not necessary. After extraction following preliminary iridectomy, atropin is seldom required, as the iris is not incised, and hence but slightly irritated. While acute glaucoma after cataract extraction seldom occurs, its occasional occurrence decidedly discourages one in the use of atropin.

IMMATURE CATARACT

The tendency at present is to operate on cataract much earlier than formerly; that is to say, some type of operation is done before the cataract is perfectly mature. The great argument for waiting for complete maturation was that cortex was not left be-

hind. That cortex is left behind even in the clinically mature cataracts has been made evident to all. The dictum that no cortex will be met with in a cataract patient over 75 years is erroneous. In the majority of ripe cataracts, considerable cortex is left behind, concealed posterior to the iris. The number of cases requiring needling does not seem to diminish as the age incidence increases. One great disadvantage in waiting for complete ripening is the attendant physical and mental depression developed by the patient. Because of these and other reasons, numerous procedures were advocated for dealing with immature cataracts, particularly those in which the visual deterioration is nearly equal in both eyes. One has a number of methods from which to choose, the choice depending on what is best suited to the individual case. It is hardly fair to the patient to rigidly adhere to one method to the exclusion of all others.

Roughly, these methods may be divided into (1) the regular capsulotomy extraction. (2) Regular extraction with irrigation of the anterior chamber, thereby removing a large part of the cortex. Because of the criticism of this step, it will later receive separate consideration. (3) Preliminary iridectomy with or without some attempt to hasten ripening; (4) the Homer Smith operation, consisting of a free preliminary capsulotomy eight hours in advance of the regular combined extraction; (5) the intracapsular or socalled Smith Indian operation, or some of its modifications.

If the regular capsulotomy extraction is done, all may be well and a splendid result obtained, provided the residual cortex is of the light, fluffy, nonadherent type. If of a sticky, tenacious and adherent quality, a great deal of trouble may be experienced, and a needling or repeated needling resorted to. Unfortunately, this cannot be told in advance, except that the younger the individual, the more likely will the cortex readily absorb. In addition, the fluffy kind of readily absorbable cortex seems to act less as a foreign body than the sticky type, and consequently less iritis and iridocyclitis is encountered in such instances.

It is probably apropos to discuss anterior chamber irrigation at this point. A positive contraindication to irrigation is a known fluid vitreous or the loss or presentation of vitreous. In the absence of these conditions, lavage of the anterior chamber is most effective in getting rid of blood, cortex and air bubbles. With a collapse of the cornea, its normal rotundity may be restored by filling the anterior chamber with physiologic saline solution. The contention that irrigation enhances the danger of infection has little weight, as the complete apparatus is boiled in the sterilizer. There is no more danger in introducing sterile, normal saline solution into the anterior chamber than there is in the manipulations of the iris repositor. It is a source of great satisfaction to see a mass of residual cortex melt away with irrigation and a perfectly black pupil emerge.

Preliminary iridectomy has received separate consideration. In immature cataract it, in itself, may accelerate maturing, tho often not to any appreciable degree. Stroking of the lens either directly or thru the cornea has never appealed to me much.

The Homer Smith method of preliminary capsulotomy has not gained many adherents. My personal experience with it has been limited, but favorable. One trip only to the hospital is required, but two complete aseptic preparations for operation are necessary. A wait of more than eight hours between capsulotomy and extraction may allow the cortex to swell sufficiently to irritate the iris and make local anesthesia difficult. The secret of success with the Homer Smith method seems to reside in a full and free capsulotomy. Unless a large cut is made in the anterior capsule, sufficient opacification of the cortical material and its separation from the lens capsule will not take place. A free crucial incision is made in the lens capsule with the pupil well dilated with atropin.

The intracapsular operation has been better advertised and "press agented" than any other procedure. Its propaganda is still going on. It was seized upon so readily because the wish was father to the thought. We wished and hoped to get rid of all our troubles at one fell stroke, and the removal in the capsule promised relief from retained cortex, iritis, iridocyclitis, after cataract, needlings, etc. How much of this has been fulfilled is known to all of you. Even in the highly successful cases, one thing has been made apparent; viz., that the eye, after the intracapsular extraction, is for a long time a weak, watery, sensitive and irritable eye. It takes a long time for it to "settle down." Another point, privately stressed by Dr. Green, is that glaucoma is prone to develop after the intracapsular operation. This opinion arose from his observation of three cases of increased tension following intracapsular extraction, noted during one month. Glaucoma, of course, has been observed after every type of operation. Would not some of these eyes have developed glaucoma if no operation had been done? One cannot say, but it is possible. Peripheral anterior synechiæ, incarcerated iris, lens material, lens capsule or vitreous may account for some of the cases. This chapter in ocular pathology is still undeveloped. Following Col. Smith's visit to St. Louis last year, I was requested to prepare an editorial which appeared in the August, 1921, number of the Missouri State Medical Journal, and which I take the liberty of repeating here:

COLONEL HENRY SMITH'S VISIT TO ST. LOUIS.

"The great reputation gained by Lieut. Col. Henry Smith, of the British Indian Medical Service, in cataract work, evoked the interest of American ophthalmologists. The oculists in St. Louis, no less than those of other cities, were desirous of seeing the master himself at work, consequently Colonel Smith was invited to visit St. Louis and give a demonstration of his method. He graciously acquiesced in both respects, the Ophthalmic Section of the St. Louis Medical Society acting as his host on June 24 and 25. A clinic was held on the 24th, at which forty patients were operated upon. In two instances the ordinary capsulotomy operation was done, in two others secondary membranes were removed, and in the remaining thirty-six cases the intracapsular operation, for which Col. Smith is noted, was performed.

At the outset, it is only fair to state that the operator was working amidst unfamiliar surroundings, with instruments not his own and not in the best of condition. Also, that the cases were not of his selection, and the histories of the patients were virtually unknown to him. Furthermore, his audience was a critical one, and in some respects not wholly sympathetic. To have had his own highly trained assistant would have proved a great advantage. Undismayed by all this, Colonel Smith courageously went ahead. An operator demonstrating his method away from home is always beset with these difficulties, and in addition is generally presented with a fairly large proportion of difficult, complicated, or unsuitable cases. The clinic under discussion was no exception in this regard.

To preserve an open mind before seeing a celebrity operate, is the creditable and proper attitude. To form definite opinions after viewing his performance, is both human and natural. It is very doubtful if Colonel Smith made a single convert in St. Louis to his method. The intracapsular operation, safeguarding the interests of the patient and giving the greatest visual result, is the hope of many ophthalmologists; but in its present form, the Indian operation cannot be said to meet these requirements. This is the individual opinion of the writer, and may not be the opinion of others. First, the trauma to the eye is excessive; second, the proportion of vitreous losses is too great; third, the corneal incision is not conducive to rapid repair and produces in many instances a high grade astigmatism; fourth, and in the writer's opinion one of the greatest objections to the operation as

done by Colonel Smith himself, is the fact that a proper toilet of the eye is impossible; fifth, the corneal incision, large coloboma, lack of reposition of the iris, and drawn up pupil, produce an unsightly looking eye. It may be argued, and justly so, that vision and not a cosmetic result is the desideratum. The cosmetic result, however, weighs heavy with the American patient, especially if he knows that he can have it in addition to the visual result.

So far as the writer has ascertained, no primary infection occurred in any of the cases, which is remarkable in view of the fact that asepsis in the sense common to most American ophthalmologists was not practiced. The many weary hours put in by our operators in preparing patients, scrubbing hands, and in the countless details making up an aseptic technic, were made to appear as Love's Labor Lost. The law of averages, however, will be found to operate in favor of asepsis as we practice it. The thumb sponge of Colonel Smith will hardly commend itself to our confreres.

Altogether, the demonstration by Colonel Smith was highly interesting and educational. If anything, the audience, with possibly few exceptions, was convinced that the older methods had best be adhered to, for if the man who has done 50,000 cataracts runs into so many difficulties and complications, what would be the fate of the tyro? An operation does not end at the operating table. There are postoperative complications and sequelæ. The procedure giving the minimum of these is the best operation, providing always that the maximum of vision is obtained. Furthermore, we have to live with our patients.

The one advantage of the Indian operation is that the lens is removed in its capsule; its disadvantages have been enumerated.

In selected cases, and in those over 60 years of age with no contraindications, the following technic embodying the central idea of Colonel Smith's procedure might be carefully tried out: First, a careful corneal section coming out at the limbus, or with a small conjunctival flap; second, a clean radial iridectomy; third, a trial with a squint hook in making pressure to break the zonule. With weak zonules, this is easily accomplished with slight pressure. Fourth, a careful toilet of the wound with reposition of the iris. Done in this manner, it is doubtful if the number of vitreous losses will be any greater than in the older operation. They should be much less as the cases are selected. Under 60 years of age and in high myopia, or with fluid vitreous secondary to uveal disease, any intracapsular operation is contraindicated, and all operations are fraught with danger. To these may be added all arteriosclerotic individuals and those with high blood pressure.

The foregoing has been written in the kindliest spirit and is not meant to reflect on the personal charm or great skill and dexterity of Colonel Smith. Some of the operations, particularly the complicated ones, were most skillfully performed. One capsule remains was removed in toto, and in a cataract secondary to iritis, with the iris bound down to the lens, the synechiæ were loosened and the lens removed in its capsule with no loss of vitreous, in a manner demanding the greatest skill and courage. It was done in a matter of fact way as being all in a day's work."

A questionnaire sent out five months subsequent to this series of operations revealed the following interesting facts, which were communicated to the Ophthalmic Section of the St. Louis Medical Society. Reports of 41 operations were returned, tho the number operated upon was supposed to be forty:

Mature cataracts	16
Immature cataracts	21
Iridectomy done in	36
Intracapsular operation done in	36
Capsulotomy done in	2
Secondary cataract done in	3

Vitreous loss in 11 cases.
Iritis followed in 12 cases.
Iridocyclitis in 14 cases.
Choroidal hemorrhage in 5 cases.
Prolapsed iris in 9 cases.
Updrawn pupil in 20 cases.
Enucleation done in 3 cases.

Striped keratitis recorded in 8 instances.

With reference to the vision, it was 6/6 in two cases, one of these being a capsulotomy operation in a 27 year old man; 6/9 in 4; 6/13 in 5; 6/15 in 2; 6/20 in 3; 6/25 in 3; 6/40 in 4; 1/37 in 1; P. L. or H. M. in 6; nil in 4; enucleations 3; Not recorded, but bad in 4.

NEEDLING OR LINEAR EXTRACTION.

In a discussion of cataract, some reference must be made to needling. It has been customary to handle congenital cataracts and traumatic ones in young people by doing a single or repeated needling. In a proportion of the case a good result is obtained, but many times thick capsular remains are left behind, and the result is only a partial success. I question the wisdom of throwing such a burden on the eye as is entailed in the absorption of large swollen masses of lens material. This applies particularly to bilateral conditions, such as total congenital and zonular cataract.

The lens is an epithelial structure, also a proteid substance; when exposed to the fluids of the eye, it is absorbed, and, as a result, has the power of sensitizing the eyes to lens proteid. The subsequent needling of the second eye may, therefore, be attended by serious risks. Even in the absence of this more or less theoretic danger, no great good is apparent in delaying the desired end result, which is a clear pupil. Needling was proposed and practiced before the era of aseptic surgery, and was a much safer operation then than linear extraction.

The advantage of needling seems to have disappeared with the advent of asepsis. The trauma connected with needling is not limited to the making of a rent in the capsule, but is continued by the swelling and absorbing lens substance. In the aggregate, it may amount to much more than the trauma incident to a linear extraction. Repeated needlings may be required, whereas a single operation, as a rule, is all that is necessary in linear extraction. The latter usually is not, but may be done without an iridectomy. The time element is of prime importance, linear extraction accomplishing the result much more rapidly and satisfactorily and with less ocular reaction.

TRAUMATIC CATARACT.

The treatment of a traumatic cataract depends on the age of the patient and the condition of the lens. If the opacity is of slow formation, it may be let alone, to be removed later by linear extraction if the patient is young, or by regular extraction if older. A rapidly swelling lens in an adult, and frequently in a child, demands evacuation to relieve the secondary glaucoma.

This phase of cataract is so familiar to all, that it need not be dwelt upon. So many patients are disappointed with the visual result after the removal of a unilateral cataract (usually traumatic) that some ophthalmologists decline to operate. Three advantages, however, may be emphasized; (1) the eye and patient are prepared for eventualities should anything happen to the good eye; (2) the cosmetic appearance is improved; (3) the patient is given a field on that side.

The question as to whether the retina ceases to function when excluded from use for a long time by an opaque lens, may be made an issue. I operated on a man whose right lens had been cataractous from trauma for 22 years, and who now depends solely upon that eye in his daily work.

SUMMARY.

In conclusion the following points might be emphasized:

(1) Preparation of the patient and an inquiry into his general physical condition will do much to improve cataract results.

(2) The staphylococcus albus is no barrier to operation, if some method, such as Bell's or Verhoeff's, is employed.

(3) Preliminary iridectomy if advisable for a one eyed patient is certainly not inadvisable for a two eyed one. Its many advantages outweigh its disadvantages.

(4) Atropin should be more sparingly used after operation than is customary.

(5) Immature cataract, especially bilateral, must be dealt with before physical and mental depression set in, the choice of operation being left to the discretion of the operator, with regular extraction, plus lavage, or the Homer Smith procedure offering the best possibilities.

(6) The intracapsular operation as done at present leaves much to be desired. The maximal trauma produces a week, irritable, watery eye for a long time. The possibility of a subsequent glaucoma must be given consideration.

(7) Traumatic and congenital cataracts can be handled better, quicker and with improved results by linear extraction than by needling.

(8) Retained cortex is an irritant, acts as a foreign body and may sensitize the other eye to lens protein. This is an argument for evacuating swollen lens material after trauma instead of allowing spontaneous absorption, even tho secondary glaucoma is not present.

INTRAOCULAR MALIGNANT TUMORS IN YOUNG CHILDREN.

CHARLES J. ADAMS, M.D.

KOKOMO, IND.

A report of three cases, probably glioma of the retina. Two of the cases were in sister and brother. Read before the Indiana Academy of Ophthalmology and Oto-Laryngology.

I wish to place on record three cases of intraocular malignant tumor in young children. In order to be brief, I will omit any reference to the literature on this subject.

CASE 1. E. M., age three, female, referred by Dr. John Cooper, Kempton, Ind., July 16, 1919.

No history of malignant growths in any of the child's blood relatives. Child had never had a sick day. Parents discovered that the right eye was blind when patient was six months of age. No examination was made, however, by any physician until just before the case was referred to me. At this time, right eyeball appeared to be larger than the other and pupil was white.

Examination: Vision nil, no reaction of the iris, anterior chamber shallow, pupil small and reddish white. Lens clear, but was not able to see any part of the fundus. Could easily distinguish the tumor mass, covered by retina and apparently pressing against the posterior pupillary margin. There was no pain. Tension of eye not taken. The external parts of the eye and adjacent structures were normal.

Left eye normal. At the time of operation, I dilated the pupil of this eye and made a thoro ophthalmoscopic examination. Vision appeared to be perfect.

The right eye was successfully removed with at least one-half inch of the optic nerve. Wound healed satisfactorily.

Diagnosis by Dr. Ludwig Hektœn, neuroepithelioma, glioma.

Oct. 20, 1919, discovered a recurrence in the orbit. A small bit of tissue was again sent to the pathologist, and he was requested to section the optic nerve and investigate it for glioma. He reported that "the tissue was gliomatous, and it was evidently a recurrence, as a section of the optic nerve showed gliomatous infiltration thruout its length." The use of radium was refused by the parents, and the child died two months later after having been subjected to the merciless ministrations of one of the cancer paste specialists infesting our community.

The interesting feature of this case was the complete gliomatous infiltration of that part of the optic nerve attached to the eyeball. Just how far back towards the brain the infiltration had gone is a matter of conjecture.

The question of what should be the rational procedure to follow in these cases arises in one's mind. I am of the opinion that what is done should be prompt and thoro. If the tumor is confined within the eyeball, I believe it is only necessary to remove the eye and as much of the optic nerve as is possible by the use of the snare. Then a complete examination should be made by the pathologist, not only of the intraocular tumor but of the optic nerve as well. In the event that the optic nerve is completely or only partially infiltrated, there should be a complete exenteration of the orbit. In either event, there should be a complete and proper exhibition of radium following the operative procedure.

CASE 2. L. B., age two and one-half years, female, referred by Dr. R. B. Shoop, Sharpsville, Ind., July 5, 1919.

Family history negative on both sides. Personal history, healthy in every respect with the exception of the eye. Parents discovered that the left eye was blind at three months of age, and that it was enlarged. It continued to enlarge until at the time of my examination it was approximately twice the size of the other eye.

Examination. Child was hard to manage and could not make complete examination of either eye. The left eyeball was proptosed about one-half inch. The crystalline lens was dislocated forward, pushing the iris in front of it to the posterior surface of the cornea. Lens was opaque. For past three or four weeks, child had been suffering very severely from the pain in this eye.

At the time of operation, I examined right eye under mydriatic, and discovered in the internal and inferior part of the fundus a large mass covered by retina. The retina was almost opaque, but the tumor shone thru it as a dull red mass. Retinal vessels, while somewhat enlarged, did not appear abnormal, and the retina at no place appeared to be intimately connected with the tumor. The tumor appeared to be a rough, uneven structure, and the retina was apparently draped over the mass, merely touching the high spots. The retina was normal and attached in the upper and external part, above a line drawn horizontally just superior to the macula, and external to a line drawn perpendicularly thru the macula. The eye was hypermetropic several diopters.

Operation. I removed the left eye July 6, 1919, successfully. Parents of patient refused permission to remove right eye. At this time, my usual procedure was to amputate the optic nerve with scissors passed between the eyeball and the external canthus. After several unsuccessful attempts, I was forced to pass the scissors between the eyeball and the internal canthus when I was successful at the first effort. I discovered that the failures were due to the fact that the optic nerve, after leaving the globe, had at one-eighth of an inch distance turned at right angles, and was directed towards the ethmoidal region.

The Laboratory of Pathology and Bacteriology of Chicago reported the case to be a "small, round celled sarcoma attached to the retina, with no involvement of the optic nerve."

There was a speedy recurrence of the tumor mass in the orbit, and on August 15, 1919, a complete exenteration of the orbit was made down to and including the periosteum, and an attempt was made to get as much more of the optic nerve as could be drawn thru the optic foramen. Radium was refused. In less than a month there was a recurrence in the orbit which grew rapidly. Child died two and one-half months later.

With the desire of reporting this case in the American Journal of Ophthalmology, and suspicious of the diagnosis of the Laboratory, I wrote to Dr. Edward Jackson concerning the case. In reply he stated that, "The only primary growth known to start from the retina is glioma, and if the case is reported as sarcoma it would have to be backed up by a very careful detailed account of microscopic findings." On two or three occasions, I took this matter up with the Laboratory by letter, and each time was assured by them that they absolutely stood back of

their diagnosis, not only on the reports issued, but in addition offered to supplement it by "a report which you can incorporate in your article which you state you wish to write." They assured me, that when the specimen was sent to them, it would be carefully preserved awaiting my further instructions. However, all the satisfaction I obtained was promises, and a recent letter written them was not answered. It is my opinion that the tumors in this case were gliomatous instead of sarcoma.

CASE 3. A few days after the death of the little girl, there was born to the same parents what appeared to be a normal, healthy boy. Saw this baby when it was a month or six weeks old and, while no ophthalmoscopic examination was made, the eyes appeared normal. I really had no reason for suspecting the same disease in this child. At three months of age, it was discovered that there was a white tumor in each eye.

I saw this child a short time ago, when it was just slightly past two years of age, and discovered a gliomatous looking mass obstructing both pupillary spaces. I think I am safe in stating that this is the same malignant neoplasm that destroyed his sister. Parents refused to have anything done.

DISCUSSION: In a brief review of the literature, I noticed that Fuchs quotes Leber as saying that 40 to 50 per cent of cases will get well if the eye is enucleated soon enough.

Rex Duncan reports three cases which he thinks were cured by the use of radium. These are reported in the American Journal of Ophthalmology. Kauslma has an article on the use of the X-ray, but his conclusions are rather indefinite. Really, you could not discover whether he thought it was or was not beneficial.

The incidence of the disease is estimated to be 1/100 of one per cent, over a period of forty-two years, by The Royal London Ophthalmic Hospital.

Regarding the sarcoma being attached to the retina, I did not think it was, but I thought it would be interesting if this was the case. I took the matter up with Dr. Faith, of Chicago, who advised having serial sections made of the optic nerve; but unfortunately I was unable to get hold of the eye, nor was I able to get any satisfaction from the pathologic laboratory. I thought it was rather interesting and I wanted to get all the information they had to offer. They informed me that Doctor Hektœn was their consulting pathologist, and they would stand back of their diagnosis.

One thing I forgot to put in my paper. Just back of the eyeball, in the first case, possibly 2 mm. of the optic nerve was normal, then there was an enlargement of about 3 or 4 cm. in diameter.

NOTES, CASES AND INSTRUMENTS

IMPRESSIONS OF THE CUBAN OPHTHALMOLOGIST.

C. B. Welton, M.D.

PEORIA, ILL.

Read at the banquet of the Eye, Ear, Nose and Throat Section of the Illinois State Medical Society, May 16, 1922.

The practice of medicine in Cuba is entirely different from that in the States. Cuban people are either rich or poor, and the staunch middle class people we have in America are not found here. This condition has a bearing on medical practice, in that the poor people can not afford to employ the high class Cuban physician, in consequence of which there have been formed what are called in Cuba societies, similar in some respects to our fraternal orders in the States, but having no secret work. They are organized along social, educational, recreational and athletic lines, but mainly for medical services, which they receive from the highest class of Cuban physicians.

These members pay dues of two dollars per month, which entitles them to free medical, surgical and hospital care, the use of their club rooms, entertainment, etc. There are six large societies in Havana, the largest of which has a membership of 60,000, the smallest of these 5,000, two Cuban and 4 Spanish. The societies have their own complete hospital buildings and grounds, each with its contagious ward, insane ward, operating pavillion, eye and ear department, etc. The buildings and grounds are laid out similar to the State Hospitals for the insane in Illinois, but of course not so extensive in size. On being taken thru the different wards, I was much impressed with the skillful and thoro treatment these patients were accorded, and the high type of men that are obtained as managers or heads of the different organizations.

The medical staff of these institutions are composed of some of the best physicians and surgeons in the city, and their pay, which is monthly, is very small, or about $200. Their private practice is where these physicians make their money, but the experience gained in the institutional work is invaluable to them. Many resign from the society work when it becomes too great a burden. I find the Cuban doctors to be men of alert mentality, students of and contributors to medical literature, who keep abreast of the times. Also they are skilled operators and keen observers, with the highest degree of diagnostic ability.

One of the Cuban societies, the Centro-Gallego club, has erected a building costing $2,500,000, which encloses the beautiful National opera house, with its wonderful theater and magnificent ball room.

A large institution on the Malecon is the Orphan Asylum run by the Sisters of Charity, where in the rear of the building is seen the little door thru which unfortunate infants are secretly entered. They are reared and kept in the institution, both male and female, until they attain the age of twenty-one. The San Lazaro hospital for lepers, of whom there were 500 on the island twenty years ago, faces the Gulf on San Lazaro Street. The disease here is not of a contagious type, and those afflicted with it are decreasing in number. American medical men, the late General Gorgas and Major Walter Reed, eradicated the scourge of yellow fever in Havana by exterminating the mosquito, and since 1901 the city has been exempt from this terrible disease.

At the present time, no screens are used in the hotels or homes in Havana, and no mosquitoes and very few flies are seen. There were 50,000 cases of malaria treated in Havana last year, all from the interior of the island. This is a disease they are continually fighting in Cuba. Very few cases of typhoid fever are seen, and Cuban people do not suffer from dental sepsis and decay like we do in the States, the Latin-American race seemingly having better teeth than their neighbors in North America.

Ten per cent of the inhabitants of Cuba suffer from chronic alcoholism, and while the male population are inveterate smokers, using a great amount of tobacco of the blackest and strongest kind, scarcely any cases of tobacco blindness are seen. This apparent resistance to the action of nicotin I figure is due to the outdoor life the people lead, and to the profuse amount of water thrown out by the skin in perspiration.

There are seventeen oculists and aurists in Havana. Seven are exclusive eye surgeons, and 10 combine eye, ear, nose and throat work. These physicians see annually from 1000 to 6000 cases. Dr. J. Santos Fernandez of Havana is the dean of Cuban Ophthalmologists.

Dr. Fernandez was born at Matanzas, Cuba, in 1847, and was sent at a very early age to study at Madrid and Paris. He was graduated in 1872 and entered Professor Galezowski's Clinic, where he became first Assistant and Chief of the Clinic. In 1874 he had a large eye Clinic and Dispensary at Toledo, Spain. In 1875 he returned to Cuba and established his Eye Clinic, which has operated continuously since that time. He was the first man, for several years, to practice ophthalmology exclusively in Latin-America. When Pasteur informed the world about his discovery of inmunization to rabies, Dr. Fernandez established the first Pasteur laboratory in America, long before any in the United States, and the second laboratory of this kind in the world. This happened in 1887.

He also presented the Mercedes Hospital with its first sterilizing plant. He has been very actively engaged in all social problems, such as the campaign against glanders, prostitution, tuberculosis, Child Welfare, Humane Societies, etc. He was elected president of the Academy of Sciences in 1900, and has held this chair continuously until the present time. He is also an honorary member of many international societies. He has been a prolific writer, having written over 2000 different papers, mostly on eye diseases and operations. Dr. Fernandez founded two medical papers that still live, one 47 years old and the other 22 years. He is easily the most prominent Spanish speaking Ophthalmologist.

Many cases of conjunctival disease are found here, much of the lid troubles being due to the intense glare of the sun, and also many cases of trachoma are seen. Trachoma is treated by expression and copper sulphat. They have a form of swimming conjunctivitis which is due, they claim, to dandruff from the scalp of the male. Great numbers of the inhabitants wear the dark, B. tinted, Crookes' lenses, to protect their eyes from the sunlight.

Cases of cataract are very common in Cuba. No Smith-Indian operations are being done, for their experience with the operation has not been successful, on account of vitreous loss and deformed pupils. They do a one stage operatiton, and the section and capsulotomy are combined. Many corneal diseases are common. In hypopyon and pneumoccocus ulcers, parenteral injections of milk are being used. They are also using this injection in the severe infections of the interior of the eye and in iritis, with excellent results. Their lacrimal cases are nil. The negro have a large straight canal, the white a longer, narrow and crooked canal, but in neither white or black are lacrimal cases seen.

In cases of scleritis and episcleritis, they have obtained good results with bacillary emulsion, and are using this extensively. For the operative treatment of glaucoma, they are doing the classical iridectomy. No trephining operations are done because of delayed infections. Sympathetic ophthalmia is hardly ever seen by the oculists in Havana. In 75,000 cases, Dr. Fernandez told me he had never found a case of sympathetic disease. In their tonsil operations, they do dissection with the knife, and the Sluder operation for protruding tonsils. They use very few general anesthetics in tonsil work, injecting for local anesthesia in as young as 5 years of age.

In nasal diseases, many Cubans suffer from nasal asthma and vasomotor rhinitis (no ethmoid involvement). For operation in these cases they use the cautery and turbinectomy. They have no cases of hyperplastic ethmoiditis. In the ear work, they have very little mastoiditis, but they have a good deal of ear trouble from aspergillus. Thirty per cent of the inhabitants are syphilitics, and they have a great deal of acquired and hereditary interstitial keratitis.

The natives of Cuba, however, do not suffer to the same extent from the infections of the tonsils, nasal or ear diseases as the people in our country. Taken altogether, these people are hospitable and delightful, and we can envy them the outdoor life they enjoy the whole year round, in a balmy climate, unsurpassed in any other part of the world.

INFECTED CORNEAL ULCER.

EVERETT C. MOULTON,

FORT SMITH, ARK.

Mrs., A. M., aged 66 was seen April 21, 1918. April 16, while milking a cow, the animal's tail switched, striking the patient in the right eye. Two days later, the eye commenced to pain and get red, growing worse to date. Now, a deep seated, constant neuralgic pain, particularly prominent in the right temple, of which she complains greatly.

Examination: There was marked injection of the bulbar conjunctiva, especially the temporal portion, which was deep, involving the ciliary vessels. The palpebral conjunctiva was moderately injected. The lids were very slightly swollen, with a narrowed commissure. Some secretion of a thick nature in the lashes of the upper lid. Extending from the temporal edge of the pupil to within a millimeter of the temporal limbus, was a round corneal defect filled with mucoid secretion. A smear of this material disclosed the pneumococcus.

The outline of the ulcer was irregular and ill defined. It extended down to Descemet's membrane, the margin being undermined slightly all around. The base was infiltrated and the zone of extension indicated a downward progression. There was no pannus. From the temporal limbus, a few vessels of repair could be distinguished. The pupil was normal in size and outline, but reacted very sluggishly to even strong light. The anterior chamber was of normal depth, but contained a very slightly hazy aqueous with minute hypopion. The iris was of a dusky blue compared with the bright blue of the fellow eye. There were no adhesions to the cornea. By the ophthalmoscope, a bright pupillary reflex could be determined, but no details of deep structures made out. Pupil dilated regularly and widely under influence of atropin. Tension by palpation normal, altho the eye was quite tender to pressure. Vision R. = 12/70; L. = 12/13, approximately. The patient was illiterate.

Treatment: At this time the eye was cocainized and the ulcer thoroly cauterized with the cherry red tip of the electric cautery, and dionin instilled.

Daily, for one week, the ulcer was cleaned out by directing a stream of one part formalin in 500 parts of water against it from a hypodermic syringe, holding the point of the syringe about an inch away from the eye. Atropin and dionin solutions were instilled, and the eye bandaged daily. On the last two days of the week, tinctur of iodin was also applied to the ulcer (at this time there was no optochin to be obtained in town). So far the ulcer had not extended, altho the hypopion had gradually increased until it was 3 mm. deep.

On April 30th, the temporal edge of the ulcer gave evidence of reinfection, because of the whitish appearance of the margin. This was removed by the electrocautery.

On May 1st, the hypopion being no less and the ulcer not improving, a Saemisch incision was performed, the incision being horizontal, and the hypopion evacuated. There was no prolapse of the iris, the aqueous being allowed to escape gradually. The next

day the anterior chamber was reformed, no hypopion present, the immediate cornea surrounding the ulcer was less cloudy, and the patient was free from pain and looked brighter.

At this point it was possible to obtain some ethylhydrocuprein, and a 1 per cent solution was prepared. The paracentesis wound was reopened with a fine silver probe, and two or three minims of the optochin solution injected thru the cut into the anterior chamber. The eye was bandaged again for 24 hours. During the next week, she used 1% optochin in the conjunctival sac every hour while awake. She went home, June 8th, with the eye almost quiet, the ulcer being healed, and with vision of 12/70. She took home for use an atropin solution ½ per cent, and 25 per cent argyrol three times daily. During her stay, under my care, it was necessary two or three times to order a calomel-saline purge.

AUTOOPHTHALMOSCOPY. SUBJECTIVE EXAMINATION OF THE RETINA.

S. I. Eber, M.D.

PITTSBURGH, PA.

Autoophthalmoscopy or autoophthalmo-fundoscopy may be defined as that act of performance by which one may view his own fundus oculi.

Many different methods for this purpose have been described, and many instruments have been designed by Purkinje, Coccius, Heymann, Giraud-Teulon, Zehender, Wessely, Gould and others. But all of the various methods thus far described have been exceedingly difficult, and the various instruments devised for that purpose are more or less complicated, so that only a skilled ophthalmologist has been able to observe his or her own retina by using the other eye; that is to say, in making an observation of the retina of the left eye, one would be required to see it with the right, and vice versa. Such an observation is of little or of no practical value.

The writer has employed an original method, which presents distinct advantages over those heretofore described. By this method, the patient, whether child or adult, may readily see his own retina and be able to describe to the physician its appearance, in accordance with his intelligence. In the method employed by the writer, a specially constructed instrument is unnecessary. Thanks to electricity, a transilluminator in good working condition will serve for the purpose. The writer uses a DeZong ophthalmoscope with its mirror part removed, as no mirror is necessary. After removing the mirror part from his electrical ophthalmoscope, he calls it an "autoophthalmoscope."

Technic:—The writer introduces the autoophthalmoscope slightly into his orbit, above or below the eye, and moves it (the scope) back and forth constantly from right to left and from left to right, stimulating the retina, whereby a beautiful view of the inverted image of the fundus oculi appears before him greatly magnified.

An autoophthalmoscopic examination may be performed in a lighted or in a dark room; the retina is much better seen in the dark room. It may be performed with eyes open or closed; the retina is seen much better with the eyes closed.

By the method employed by the writer, the region of the macula lutea appears most clearly. The optic disk appears as a black spot from which emerge the retinal central blood vessels branching off to be distributed thruout the retina. The retinal vessels also appear dark, and are richly branched. No distinction can be made between arteries and veins from their appearance.

What is the value of autoophthalmoscopy as employed by the writer, and as herein described? This method is, of course, in its infancy. Time alone will determine. It is the intention of the writer to add this method to the routine subjective examination of each and every patient. It should unques-

tionably prove of marked value in the diagnosis of intraocular affections, where ordinary methods to ascertain their presence cannot be employed. It may also prove a valuable aid in the diagnosis and localization of certain brain lesions.

The writer earnestly requests that those fellow practitioners having large amounts of clinical pathology employ the method described herein; which he trusts will be found of practical value in the fields of ophthalmology and neurology. He further suggests discussion of this method by written articles in the columns of this or other Journals.

(The method of observing the shadows of the retinal vessels was suggested by Purkinjé in 1823 and has often been described in books on physiology and ophthalmology since. The small electric light bulb, that can be pressed against the eyeball, or the lids, greatly facilitates this method of examination. As Dr. Eber suggests it may be made of practical value and importance; and it should be carefully studied with that end in view. It would be a mistake to call it ophthalmoscopy, being not practiced with the ophthalmoscope, and constituting quite an independent method of examination.—E. J.)

SOCIETY PROCEEDINGS

Reports for this department should be sent at the earliest date practicable to Dr. Harry S. Gradle, 22 E. Washington St., Chicago, Illinois. These reports should present briefly the important scientific papers and discussions.

OPHTHALMOLOGICAL SOCIETY OF EGYPT.

March 3rd, 1922.

Dr. Mohammad Bey Saleh, President.

Perforation of Cornea by Piece of Egg Shell.

Dr. A. Migally reported the case of a girl of 12, cooling an egg by throwing it in the air and catching it, when its shell broke and pieces flew into her eye. Three days later, three minute pieces of egg shell were found near the center of the cornea, and in a wound, 2 mm. long, a small piece was embedded, projecting into the anterior chamber. Dr. Mazni, who was present for inspection of the hospital, removed the three minute pieces from the surface with a spud, but the larger piece, a triangle 1.5 mm. on each side, slipped into the anterior chamber. On attempting to extract it thru a limbal puncture, with iris forceps, it disappeared in the upper iris. Next day it was not visible, but the eye was quiet. Iridectomy was done, and the piece of shell found embedded in the iris was removed. A week later the eye was quiet and vision 4/60, the cornea being nebulous from old trachoma. The small size of this foreign body was thought to make it impracticable to have held it in the corneal wound, by an instrument first introduced at the limbus. The importance of noticing exactly where the foreign body disappeared was emphasized.

Blindness in Egypt.

Dr. A. F. MacCallan found, that of hospital patients, 12.2 per cent were blind in one or both eyes, the definition of blindness being inability to count fingers at 1 meter. The percentage had remained substantially the same since 1909, but the census showed a decrease of the total number of blind in the community from a percentage of 4.575 in 1907, to 4.358 in 1917. The decrease had been less because of bad food conditions, 1918 and 1919 showing slight increase. The incidence of blindness varied in different localities, Port Said and Alexandria having less than other places. The proportion of the blind to the total number of patients rose for each decade of life from 4.68 under one year to forty, 4.34 over seventy years. Among 18,198 cases of blindness, the most common causes were total opacity of cornea, 5,033; shrunken globe, 4,390; secondary glaucoma, 2,711; primary glaucoma, 1,705; cataract, 1,499. Only 17 cases were congenital.

Visit to European Clinics.

Dr. A. F. El Rasheed Bey reported his observations in a summer visit to the ophthalmic clinics of Vienna and Berlin; and especially with reference to the methods of treatment and operative procedures there practiced.

Pseudomembranous Conjunctivitis Treated with Antidiphtheritic Serum.

Dr. M. Sobhy Bey reported 4 cases, in 3 of which the condition of the cornea was threatened. In none of them was the Klebs-Loeffler bacillus present. Two were gonococcus infection; one showed the bacillus subtilis, and the other the pneumococcus and xerosis bacillus. In all of them the injection of antidiphtheritic serum was followed by rapid improvement, altho they had been doing badly under standard treatment. The doses given varied from 2,000 to 8,000 units, or as much as 10 c.c. of the serum.

Milk Injections.

Dr. M. Tewfik believed these were worthy of a full trial in all bacterial infections. He reported 3 cases, one of gonorrheal ophthalmia with sloughing of the conjunctiva and hazy cornea; one of abscess of the orbit, into which the probe could be passed two inches; and one of dendritic ulcer of the cornea. Rapid improvement and a good result were obtained in all cases.

Foreign Bodies in the Eyeball.

Dr. Z. Seddik reported a case in which, while chipping a piece of cop-

per with a chisel, something flew into the eye. He was treated for a month, no foreign body being suspected, before he was sent to Mansura Hospital for magnet diagnosis and treatment. The Haab magnet gave a strongly positive result, but it was impossible to draw the foreign body into the anterior chamber. Iridectomy was done, and in the piece of iris removed, two small pieces of metal, one by two millimeters, were found glued fast by inflammatory exudate. Cataract followed, but after repeated needlings vision = 6/9 partly, was obtained.

Ethmoiditis Simulating Orbital Tumor.

Dr. R. B. Dolbey reported 4 cases in which suppuration of the ethmoidal sinus simulated orbital tumor, so that they came to operation. In each case the eye was displaced downward and outward. In only one case was there any nasal discharge, and in it suppuration of the frontal sinus was also present. Two of the patients were adults and two children. "On operation (modified Krönlein), subperiosteal exploration of orbit thru eyebrow and inner canthus incision, the ethmoidal cells and orbital plate of the ethmoid bone were found to be bulged forward into the orbit by a mass of yellow secretion, under great pressure, and necrosed fragments of the ethmoid bone. The bone disease extended from the anterior ethmoidal cells to the sphenoidal sinus and the region of the spheno-maxillary fossa." Drainage was made into the nose by a big tube. These cases had slowly developed following an epidemic of influenza in 1919, and came to operation within the last fifteen months.

Filarial Cyst of Orbit.

Dr. M. Sobhy Bey reported the case of a man of 30, who had noticed bulging of the left eye for 2 years. A soft, tender, fluctuating mass could be felt at the outer side of the orbit, separating the outer wall from the globe, which was pushed down. A Krönlein operation was done, and the wall of the cyst accidentally ruptured. The cheesy material poured out was collected aseptically and searched in vain for evidence of psammoma (it extended thru the sphenoidal fissure) or of any germ, especially the tubercle bacillus. But in a smear from an inoculated tube, microfilaria were found, believed to be embryos of filaria bancrofti. Examination of the patient's blood at night showed these to be present in large number. It was thought that injury to the cyst might have brought the death of the filarial worm present in the orbit, with inflammation of surrounding tissue. But it was possible the microfilaria found in the cheesy matter got there thru contamination from the patient's blood during operation.

Appearance of Fundus in Ankylostoma Infection.

Dr. M. Riad reported the appearances found in 20 cases of severe anemia due to anklyostoma worm infection. In 7 cases the percentage of hemoglobin varied between 30 and 50, in the others it was 60 to 70. In the former the fundus reflex was light yellow instead of rich red; veins large, tortuous, flabby, and had the appearance of flattened ribbons; arteries were thin and in a few cases the retinal arterioles were corkscrew shaped. In one case the superior and inferior retinal arteries were pulsating. This is explained by the fall of arterial pressure. In one case, with hemoglobin 40 per cent, a few white dots were observed, and two fresh flame shaped hemorrhages. In a negro, with hemoglobin 30 per cent, vision R. 6/24, L. 6/18, choroidal reflex was pale, veins dilated, tortuous and pulsating, arteries thin, disc very pale with sharply defined edge, the left being paler. Fields showed contraction.

Optic Atrophy.

Dr. A. F. MacCallan, under the heading of interesting cases seen in 1921 at the Egyptian hospitals, calls attention to the classification recently worked out for the large number of cases of optic atrophy encountered. These are divided into: (1) Primary, as in spinal disease and arteriosclerosis; (2) the results of retrobulbar neu-

ritis; (3) postneuritic atrophy; (4) the result of the disease of the retina and choroid; (5) after compression or injury of the nerve; (6) unknown causes. Of 114 cases reported in 1921, 46 were postneuritic; 19, primary; 24 were caused by retrobulbar neuritis. Of these last, 23 were in patients who had recently suffered from acute infectious disease, generally typhus. There were 11 secondary to retinitis, and 3 were due to compression or injury to the nerve. There were 11 of unknown causation.

Parinaud's Conjunctivitis.

Dr. M. Sobhy Bey reported a case, probably of this character, occurring in a man of 40, who had previously suffered from trachoma. The left upper lid was pushed away from the globe by a flat granular tumor, starting from the temporal part of the tarsus, spreading over the nasal half and affecting the upper retrotarsal fold, mostly on the temporal side. Tuberculin test and Wassermann reaction were negative. The left submaxillary gland was enlarged and tender, but the preauricular gland was not. The seat of the lacrimal gland was tender and swollen. Inoculation of a young rabbit with a piece of the growth gave a negative result. In discussion, Dr. E. C. Fischer reported and showed photographs of a typical case of Parinaud's conjunctivitis.

Lymphangiomata of Face and Scalp.

Dr. M. Riad reported a case, illustrated by photograph, in which a man of 20 had noted swelling in the forhead 4 years before. There were soft indefinite tumors in the forehead, upper lids, right side of chin and scalp. A portion examined microscopically proved to be lymphangioma.

Primary Glaucoma in Egypt.

Dr. A. F. MacCallan pointed out the high incidence of glaucoma in Egypt, 2,254 cases out of the total of 127,223 persons presenting for treatment, could hardly escape the notice of any ophthalmologist practicing in Egypt. Because of delay in seeking treatment, 75 per cent of these cases were already blind in one or both eyes. The operation of election in uncomplicated chronic glaucoma has been trephining the corneosclera according to the method of Elliot, with iridectomy thru the trephine hole, which is made with 1.5 mm. trephine. In acute, and many cases of subacute glaucoma, the operation advised is iridectomy. The incision made with a Græfe knife, the iris incised with scissors at either extremity of the wound, which should be fairly peripheral. The iris is seized with forceps and torn away from its periphery. Trephining is not advisable in cases where there is opacity of the lens or a thin conjunctiva, nor where edema of the conjunctiva has been caused by previous use of eserin. During the year, 337 iridectomies and 492 trephinings with iridectomy had been done. Operation on both eyes was advised in all cases of glaucoma, even tho there were no clinical signs of glaucoma in the better eye.

Silver Nitrat Solutions for Conjunctival Disease.

Dr. M. Kamel urges that the 2 per cent solution of silver nitrat is not powerful enough to combat acute purulent ophthalmia or very chronic trachoma, and that its further dilution when applied renders it still more inefficient. He has gradually increased the strength to a 5 per cent colution, with encouraging and satisfactory results. He concludes such applications are appropriate for cases of obstinate ectropion in children, severe purulent ophthalmia with clear cornea. cases of purulent ophthalmia which resist the ordinary treatment, or are complicated by ulcers; cases in the third stage of trachoma with rough thickened conjunctiva, which do not improve under the usual methods but are thought to require excision; and those with recurring corneal infiltrations. It is not advisable to use it in less severe cases, as it is painful and irritating.

Ocular Complications in Malaria.

Dr. W. H. Kiep had observed the following conditions which he attributed to malaria: Dendritic or herpetic keratitis, deep seated central

parenchymatous keratitis, retinal and preretinal hemorrhages, optic neuritis, generally accompanied by retinal hemorrhages; paresis or paralysis of the seventh cranial nerve. He has not been able to decide that uveitis is caused by malaria. Of 63 cases of herpetic keratitis, 46 gave no history of previous eye trouble. The ocular condition might arise the same day as the initial malarial attack, or long afterward. In his experience, it was invariably unilateral, and arose from various forms of the plasmodium.

In all four cases of parenchymatous keratitis, the Wasermann was negative, there was no other evidence of syphilis and the keratitis was always unilateral. In each case, the parasite of benign tertian fever was found. The progress of the keratitis was slow, its duration averaging three months, and central permanent opacity of the cornea was left. With reference to retinal hemorrhage his experience agreed with that of Fischer, who found the cause of the hemorrhage to be the blocking of vessels with the malarial parasite, and published a case of connective tissue formation in the macular region from a film of extravasated blood. Kiep's ten cases might well be explained by occurrence of hemorrhage in obstructed retinal veins. In two cases, hemorrhage into the vitreous was followed by retinitis proliferans. Four of his cases also showed optic neuritis. He had seen seven cases of optic neuritis without hemorrhages, and 2 cases of postneuritic atrophy, which both gave negative Wassermann reaction. In the four cases of lagophthalmos, the trouble commenced when convalescence from cerebral malaria was established in one case, and in another after an attack of tertian malaria, and was aggravated in a subsequent attack of ague.

Adenoma of Meibomian Glands.

Dr. M. Sobhy Bey reported a case in which such a tumor simulated epithelioma. It had appeared three months before, was excised, and six months later was a small excavated ulcer, discharging yellowish debris. The margins were indurated and whitish globules were visible. The tumor was dissected out, and the microscope showed masses of glandular epithelium, surrounded by connective tissue.

Arteriovenous Aneurism of Orbit.

Dr. M. Tewfik reported a cure of a case by ligation of the common and external carotids. No tumor could be detected a year after the operation.

Palpebral Sporotrichosis.

Dr. M. Sobhey Bey reported a case occurring in a man 30 years old, who had noticed a swelling at the inner canthus 6 weeks before, followed by swelling of upper and lower lids. There was a shallow ulcer, 3 x 8 mm. in diameter, surrounded by brawny swelling, and a nodule as big as a pea in the lower lid; a similar one in the upper lid, and a cord like resistance going from the latter to the ulcer near the inner canthus. There was a history pointing towards lues, and enlarged glands over the body. Careful examinations failed to show spirochetes, but showed a branching mycelium with attached conidiae. A colony of the mycelium was of clear chocolate color, bounded with an irregular edge showing proturbances and convolutions. Inoculations of rabbits and a guinea pig were negative. Potassium iodid was ordered, beginning with 2 grams daily and reaching 10 grams in three weeks, when the ulcer was healed and the swelling had diminished.

Iridotomy for Glaucoma.

Dr. A. M. Girgis reported that the 9 cases operated on in 1920 had been seen within the last year, and all were successful. He presented a case, in which, after 16 months, the tension was 20 mm. of Hg., and the gap in the iris quite patent. He has done more cases in 1921, with success, and recommends the operation for all cases of chronic or acute glaucoma in which the tension is reduced by eserin.

Unilateral Congenital Ptosis.

Dr. Fakhry reported a case in a girl of 12, there being no other congenital defects, and the eye otherwise

normal. The operation of Motais was done with "marvelously good" results.

Intraorbital Tumor.

DR. H. ABU SEIF reported a case of a girl of ten, in whom the right eye had been slowly proptosed for 7 years. The lids hardly covered the globe. The orbit was exenterated. The tumor seemed to be a angiofibroma, which had started from the dura mater at the base of the frontal lobe and destroyed the roof of the orbit.

Scrofula and Phlyctenular Conjunctivitis.

DR. M. ZAKY reported a case which had resisted treatment; the glands of the neck were enlarging.

The following officers were elected for the ensuing year: President, Dr. Ahmad Fahmy El Rasheed Bey; Vice-President, Dr. Mahmoud Zaki; Honorary Secretary, Dr. Mohammad Mahfouz; Ass. Hon. Sec., Dr. Hassan Barrada; Honorary Treasurer and Archivist, Dr. A. F. MacCallan.

MEMPHIS SOCIETY OF OPHTHALMOLOGY.

September 22, 1922.

Tumor of Retina.

DR. E. C. ELLETT reported the case of a baby of six months, seen August 26th. Something was noticed wrong with R., since Aug. 10. The ball appeared enlarged, pupil dilated, a few posterior synechiae, and a yellowish mass in the vitreous with vessels on its surface. Tension plus two. Diagnosed glioma, and eye removed August 29th. The ball was not enlarged, measuring 20 mm. in diameter, the cornea being 14 mm. in diameter. The day of the operation, the anterior chamber was full of a cloudy material, so that the pupil could not be seen. Transillumination was not very satisfactory but seemed positive. On section the eye, which was shown, was filled with a yellowish mass, having the appearance of glioma. Microscopic sections not yet made. While under ether, the left pupil was dilated and the apparently normal left eye examined. Four d.d. down from the disc, and a little out, is a large white mass, projecting into the vitreous about 15 D. It is 3 d.d. in diameter, and the retina can be seen beyond it. No vessels on its surface. The eye has been seen by Dr. Lewis and Dr. Anthony.

Discussion.—DR. ANTHONY has never seen a glioma this early in development, and by the fact that it has no vessels he does not think it a glioma.

Sequels of Cataract Extraction.

DR. E. C. ELLETT showed the patient, Mrs. J. H., age 61. Cataract extraction in another city July 15th. There is a prolapse of the inner pillar, and bands on the surface of the vitreous and an old corneal scar. Ever since the operation, the eye has been painful and slightly inflamed. Tension normal.

Discussion.—DR. STANFORD does not remember seeing striae so well developed. He has never heard this as being due to vitreous loss.

DR. SIMPSON said that in any case where there is loss of vitreous, there has been a great deal of disturbance in the eye. There must be some uveitis going on all the time. He does not see why there should be so much pain.

DR. COOK said there was some loss of vitreous at the time of operation. Extraction was done without undue force. He believed the pain due to incarceration of the iris in the scar.

DR. ELLETT did not know if it would do to relieve the iris now. The eye is not worth much treatment.

Secondary Glaucoma; Enucleation.

DR. E. C. ELLETT'S patient, J. M., age 34. In March, 1917, was struck in the L. E. by a nail. After three weeks of pain and inflammation, the vision was lost. The eye has been painful at times. September 5, 1922, eye blind, pupil 7 mm. and fixed. A central corneal scar. Equatorial scleral staphyloma. Tension plus two. The condition was diagnosed as secondary glaucoma with resulting scleral staphyloma. Enucleation and glass ball implanted on September 6th. Catgut suture in Tenon's capsule and silk in conjunctiva. The eye has not been

sectioned, but the specimen was shown. An equatorial staphyloma involved three-fourths of the circumference of the eye. The ball was 35 mm. in vertical diameter, 32 mm. in the horizontal diameter and 30 mm. in anteroposterior diameter.

Discussion.—Dr. J. J. Shea saw the case first, several years ago, and the X-ray could show no foreign body.

Dr. E. C. Ellett said the interesting features are the development of secondary glaucoma; and, on account of the age, the sclera had yielded to a degree that it would not have done in an older person. Dr. Morax uses the bone taken from a calf's sternum and carves a ball from it. There is a possibility of it not being sterile, and the cosmetic results from a glass ball are very good.

Sac Removed for Dacryocystitis.

Dr. E. C. Ellett showed a microscopic section of a lacrimal sac removed for chronic dacryocystitis of five or six years duration. Patient was a lady, aged 76 years, with chronic glaucoma. The sac was removed preparatory to a trephine operation. R. E. practically blind from glaucoma simplex. T. 34 (Schiötz). L. 15/30 with glasses; field contracted, especially nasally. T. 28. Both nerves pale and cupped. The sac was removed with local anesthesia on July 22nd. Corneoscleral trephining with complete iridectomy September 6th. The latter operation was followed by minimum reaction.

ABSTRACTS.

S. Sgrosso: Retrobulbar Injections in Ocular Therapy. Arch. di Ott., 1922, vol. 39, page 131.

The author reports his results in the use of retrobulbar injections of stenosgene. This is a combination of strychnin, phosphorus, arsenic and formic acid, originated by Angelucci. He found it of special value in degenerations of the optic nerve, specific or otherwise, and it often helped where strychnin alone was of no effect. The first injections were made subcutaneously in the temple. Later subconjunctival injections were made, but the author believes that the best method of application is by retrobulbar injection, which allows the drug to act on the retina and nerve by direct diffusion. Besides its value in stimulating the elimination of toxic products, its hypertonicity is of effect in retinal detachments, in which it seemed to be better than sodium chlorid. After instilling 4% cocain in the conjunctival sac every three or four minutes, for fifteen minutes, the needle is inserted in the fornix at the lower outer angle and is pushed slightly down, back and inward for its whole length. Injections may also be made thru the skin in the same directions. There is no pain or local inflammation after the injection, but occasionally a slight chemosis. As a rule three injections a week were given, and injections were sometimes continued for several months. The cases reported comprise seven tabetic optic atrophies, all of which showed improvement in vision, which in some cases was quite marked. In one case the vision improved in one eye from light perception to 1/100, in another case from 1/100 to 1/20. Four cases of postneuritic atrophy are reported, one of alcohol and nicotin amblyopia, one of quinin amblyopia, all of which showed some improvement. Four cases of retinal detachment, all in high myopes, are reported, in all of which the detachment flattened considerably after a series of injections and in some of which vision was considerably improved. Eleven cases of iridochoroiditis and neuritis and retinal thrombosis are reported, in which, however, the retrobulbar injections were accompanied by antiluetic treatment, so that the effect of the injections was less definite. The author concludes that this method is of great value, especially in degenerations of the optic nerve. He believes that the visual improvement in these cases is to be explained by the fact, that the nerve fibers had not been destroyed but blocked by the accumulation of toxic products, whose elimination under the influence of treatment allowed them again to function. S. R. G.

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THE OPHTHALMIC YEAR BOOK.

After the completion of the present volume of the YEAR BOOK, the publication in quarterly parts under the name of "OPHTHALMIC LITERATURE" will give place to the form of an annual volume, that it had up to 1918. Inquiry among collaborators and friends of the Year Book has shown that some have a very strong preference for the annual volume; while none have expressed any decided preference for the magazine form, in which the last five volumes have appeared. Volume 19, bringing up the digest of the literature to December, 1922, is expected to be ready for distribution in June, 1923; and thereafter the annual volume will appear at about that season.

It is believed that the Year Book, as a cloth bound volume, will be more convenient and attractive to subscribers than the paper backed volumes, generally issued in Continental Europe. The bound volume will be much more readily preserved, and will not be so likely to be lost as are the present quarterly issues. By having the volumes bound before distribution, the cost of binding can be greatly diminished to the individual subscribers. This cost has enormously increased in the last five years. The expense of binding a single volume, in good cloth binding, is now from two to five dollars; varying with the style of binding and the place in which the work is done. But the additional price charged for volume 19 will be but one dollar, to those who subscribe for the Journal and Year Book in advance.

The Year Book undertakes: (1) Thru its bibliographies and indexes to place its readers in touch with the world's literature regarding ophthalmology, of the year preceding that in which it is published. (2) By the digest of the literature to call attention to all important new observations, methods and suggestions, that have been put forth in the time covered; not in the form of separate abstracts, but by bringing related matter together in an easily readable account, that presents the novel phases of the subject as gleaned from the work of different writers. Papers that are not regarded as important receive mere mention. (3) The matters treated of in the digest are carefully arranged. The plan of arrangement is the same from year to year; and, so far as practicable, the same general plan is followed in the dif-

ferent sections. Topics are grouped in this general order, anatomy, development and anomalies of the part; its physiology, diagnosis of conditions, acute inflammations, chronic diseases, specific conditions, and degenerations. Regarding each disease, the account takes up etiology and pathology, symptoms and diagnosis, cases and statistics, and prophylaxis and treatment.

It will be noticed that the Year Book does not attempt to give such abstracts as a writer, making a thoro study of a special subject, might wish to use, or quote from. This kind of Year Book would be of value chiefly to a few readers. The Ophthalmic Year Book is prepared, primarily, to keep the reading practitioner of ophthalmology informed regarding the whole literature of his specialty. Incidentally, it helps the writer, who is making an intensive study, by directing him to the papers which will be of most use to him, to consult as original sources, to study or quote from; and it indicates in a general way what special phase each paper treats of. When writers and advanced students in sufficient numbers are ready to support a different kind of Year Book, it will doubtless be forthcoming. Until then the only work of the kind in English should seek to give the most assistance to the greatest number. Adherence to this policy will make for the permanent continuance of the Year Book; and continuance is an important element in its usefulness, to even the most advanced and specialized student of ophthalmic literature. E. J.

THE CLOSING VOLUME.

This volume will exceed the last by about 100 pages. But on account of the change of paper made at the beginning of the year, it will be a little less bulky. Meanwhile Ophthalmic Literature has increased to an even greater extent, so that the two together represent an increase of over 30 per cent since 1918 in the amount of material furnished to our subscribers. The tendency is for this growth to go on, in spite of an increasing list of papers declined for lack of space. We have had but one rule in regard to accepting papers, and that has been to choose from those offered, such as we could publish in a reasonable time, that seemed to be of the greatest interest and value to the mass of readers.

Suggestions for the improvement of the JOURNAL will be most welcome. One does not have to assume the attitude of a superior being to offer constructive criticism, that may be of great value. We will not adopt such suggestions unless they are fully approved by our judgment and experience. But some of the best features of the JOURNAL and Year Book have come thru the suggestion of friendly critics. No enterprise can be permanently successful unless it has the means of drawing to itself new support and new life. We lose a certain number of subscribers each year thru death and retirement from practice. To help us get in touch with those who come up to take the vacant places is something that every subscriber can do for the JOURNAL and Year Book, in which we have a large common interest. E. J.

BOOK NOTICES

Ophthalmological Society of Egypt. Bulletin of 1922, 92 pages, 8 illustrations. Published by the Society, Cairo, Egypt.

The interesting scientific communications here published have been noticed elsewhere. They compare favorably in general and most of the proceedings of the ophthalmologic societies in the western world. This Bulletin shows keen interest in the annual meeting by an attendance of 60 out of 87 members. This interest and activity, where it might not be expected, reflects honor on Egyptian ophthalmologists; and illustrates the possibilities that open up before those who earnestly pursue the first object of this society "to study all branches of ophthalmologic science."

The illustrations add to the interest of this Bulletin. They include a temperature chart in a case of pseudomembranous conjunctivitis, 3 based on photographs of clinical cases, and four micro-

photographs showing the mycelium and conideae in a case of sporotrichosis. The instructions for sending specimens for examination are such as to serve an educational purpose, if attached to the transactions of any ophthalmologic society. At the Giza Ophthalmic Laboratory, the microscopic examination of tumors will be made free for members of the Society, if specimens are sent according to these instructions.

E. J.

Transactions of the College of Physicians of Philadelphia. Volume 43, for the year 1921; 660 pages, 25 illustrations. Published by the College, Philadelphia, Pa.

This volume has more of interest to the ophthalmologist than have the average transactions of general medical societies. The proceedings of the Section on Ophthalmology occupy 72 pages. This being the oldest section in the College, its proceedings are given first place in the appendix. They appear here as they have been published in this JOURNAL, and include some 46 different subjects.

Other papers of special interest take up: The Use of Gentian Violet in the Treatment of Infections, by John W. Churchman of New York; The Oculocardiac Reflex and Its Therapeutic Value, by Alfred Gordon; Differential Blood-pressure in Exophthalmic Goitre, by Joseph Sailer, and two papers on the Roger Bacon Cipher Manuscript, by W. M. Voynich and W. R. Newbold. These latter have interest because Roger Bacon is one of those to whom the invention of spectacles has been ascribed. Voynich has traced, with great probability, the romantic history of the manuscript; and Prof. Newbold reports some first results of undertaking to translate the cipher. These seem to show an acquaintance of Roger Bacon with the use of optical instruments, especially the telescope and microscope, hitherto unsuspected.

Other matters of general interest are: The account of the meeting in honor of Madame Curie, with the address of Dr. Abbe of New York, and papers on the physical and therapeutic properties of radium, by Prof. Goodspeed and Prof. Clark. Madame Curie's presentation to the College of an electrometer made by Prof. Curie, and the presentation of a memento of Lord Lister, and other interesting objects and books. This volume is one that well justifies the traditions of the College, preserved thru its 135 years of activity and service, and the high respect in which it is held by the medical profession of America.

E. J.

CORRESPONDENCE.

Ophthalmology in the Philippines

To the Editor: The practice of ophthalmology here in Manila, the capital and largest city in the Philippine Islands, with a population of almost 300,000, is taken up only by comparatively few. There are at present only some twelve specialists (Filipinos and Americans), and not one of them limits his practice to eye exclusively, but takes up ear, nose and throat cases as well. These few have to attend also to large numbers of patients coming from the provinces, where specialists are not available.

Personally, I would like to induce well trained American ophthalmologists to come and help us contribute, by way of original investigations, something to the science and practice of ophthalmology in the tropics.

I am enclosing herewith an article on cataract by Dr. Felisa Nicholás, which I would request you to publish in the JOURNAL if possible.. The author is unknown to you, and I presume you would require some information about her work and accomplishment. Dr. Nicolás is an instructor in the Department of Eye, Ear, Nose and Throat, University of the Philippines.

Hoping that this request will meet your kind and favorable consideration, I remain,

Yours truly,

ANTONIO S. FERNANDO.

Philippine General Hospital, Manila.

ABSTRACTS

Butler, T. Harrison, The Influence of Trauma Upon the Onset of Interstitial Keratitis. Brit. J. Ophth., v. VI, No. 9, 1922, p. 413.

The author points out the importance of the relationship in the operation of the Workmen's Compensation Act. The very meager statistics obtainable show that in about 3% of cases there is a history of trauma. The tendency is to regard the trauma rather as a coincident than a causal factor. Upon searching hospital records for ten years past, in which the question of accident was not inquired into routinely, the author found that 14% gave such a history. Later cases, in which careful inquiry was made, 25%. Patients were divided into two groups, those under and those over aged 14 years. There were fifty-nine cases, in which twelve (20%) gave a history of trauma.

The author's investigations suggest the following conclusions: (1) An attack of interstitial keratitis may be precipitated by an accident to a cornea which is disposed to the disease by syphilis or tubercle. (2) It is possible that a very slight trauma, such as the instillation of drops or the irritation of a general anesthetic, may have the same effect. (3) The attack in the injured eye is likely to be followed by interstitial keratitis in the uninjured eye. (4) It is possible that an injury to the eye may cause interstitial keratitis in the other eye. (5) The question may be asked: "Is it not possible that in every case of interstitial keratitis the attack is precipitated by some slight trauma?"

About a dozen illustrative case histories accompanies the contribution.

D. F. H.

Souques. Ophthalmoplegic Migrain. Hypothesis as to Its Anatomy and Pathologic Physiology. Soc. Méd. d. Hôp. June, 1922. Abst. Gaz. des Hôp. 1922, v. 95, p. 860.

The case was that of a man of 30, who had suffered from ophthalmic migrain since the age of 5 years. The attacks begin suddenly with an intense pain lying deep in the right temporofrontal region, which lasts 3 days and is accompanied by frequent vomiting of bile. This is followed 2 days later by a paralysis of the right oculomotor, which lasts about 12 days. The attacks recur every 3 or 4 weeks. For about 20 years, the paralysis has not disappeared completely between the attacks. For several years, complete ptosis did not appear at each attack, and the vomiting has ceased. The case is unusual because of its early onset and involvement of the abducens. It is probably due to a lesion at the region of the external wall of the cavernous sinus, tho there is the possibility of the presence of a "colloidoclassic diathesis" affecting the cerebrospinal region.

C. L.

Hagen, Sigurd. Tangential Sclerectomy in Glaucoma. Norsk Magazin for Laegevidenskaben, Vol. 83, p. 275.

This article is a report of 52 operations done according to Holth's method by Prof. Schiötz and by the author at the Rikshospitalet, Christiania. The cases were divided as follows: simple glaucoma, 40; buphthalmos, 6; secondary glaucoma, 4; and chronic inflammatory glaucoma, 1.

Complications: (a) During operation, hemorrhage in one case. (b) After operation, cataract in one case; prolonged hemorrhage in anterior chamber, 3 cases (with complete recovery); infections, none; iridocyclitis, 2 cases.

The tension at the discharge of the patients from the hospital was below the normal maximum (5.5/3) in all cases except in one which showed (5.5/2) and this became normal later. Readings were taken on 33 patients from 1 1/4 to 13 months after operation. Only 2 showed a tension above (5.5/3), and those were the two cases of iridocyclitis. The readings of the tension are given in the form of a fraction, in which the weight used represents the numerator and the scale mark of the Schiötz tonometer the denominator, as 5.5/3, and are not translated into mm. of mercury. The vision and fields appeared on the average unchanged. Unfortunately the writer does not tabulate the preoperative tensions. The immediate results

compare favorably with those of any other method, but too short time has yet elapsed to give final results.

D. L. T.

Mazzei. A Method of Recording Nystagmus. Arch. di Ott., Vol. 28, 1921, p. 28-36.

The author sums up previous methods devised for recording nystagmus both on the human eye and on experimental animals. In the author's own method, the extrinsic muscles are isolated and the recti are cut off from their scleral insertions, leaving intact only the muscle or group of muscles to be tested. The muscle is connected by a thread to a lever bearing an indicator, and the shadow made by this indicator is photographed on a revolving drum. Where it is desired to investigate antagonistic muscles, two levers and two drums are used. The nystagmus is produced by irrigating the external auditory canal with cold water. Twenty-six experiments are recorded, where only one muscle was cut. The nystagmus produced by the remaining muscles is seen to be limited in the field of the cut muscle. Cutting of all the muscles, except one, gives a record of the movements of that muscle. Where all the muscles except the internal and external rectus were cut, the tracing of one shows the rapid phase of nystagmus and that of the other the slow phase. By this method, the author expects to be able to study nystagmus in its different forms and its particular manifestations.

S. R. G.

Braun, G. Especial form of Epicanthus with Ptosis. Klin. M. f. Augenh. 1922, v. 68, p. 110.

Braun reports 6 cases. The especial form of epicanthus was that the fold of the skin originated in the lower lid and surrounded the medial end of the uninvolved upper lid in a small arc. The medial angle of the lid was not covered by the fold, but was displaced outward. The consequence was a shortening of the palpebral fissure, which had an oblique direction from down inward to upward outward. There was also complete congenital ptosis. Heredity played an important part also in this form.

With regard to the genesis, Braun assumes; that in the development of the lid and palpebral fissure in the embryo the medial lid angle is mechanically pushed back by the more intense progression of the central parts. Hence, the skin on the nasal side must form a fold. Under normal conditions, this fold is abolished by the conversion of the flat nose of the embryo into the high nose of the fetus.

Canthoplasty and operation of the ptosis according to Motais gave good results. As such cosmetic operations ought to be performed under local anesthesia, a sufficient maturity of the child must be attained.

C. Z.

Hessberg, R. Congenital family Entropion of Both Lower Lids. Klin. M. f. Augenh, 1922, v. 68, p. 120.

Hessberg observed this anomaly in 2 children of the same family, aged 2 and 3. Operations according to Birch-Hirschfeld gave good results. No anatomic anomalies could be ascertained. He assumed as primary cause, a certain weakness of the foundation of the lids, altho the tarsus seemed to be well developed. Secondarily, this was probably aggravated by tendency to spasm of the orbicularis in connection with the rachitic predisposition of both children, and the family history of tuberculosis.

C. Z.

Gibson, J. L. Papilledema. Brit. J. Ophth., v. VI, No. 9, 1922, p. 417.

Papilledema, as contradistinguished from other forms of neuroretinitis, is caused by intracranial tension. This tension is produced either by intracranial new growth, inflammatory conditions, or by chemical or microbic poisons. The increase resulting from poisons is likely due to irritations of the choroid plexus exciting excessive secretion. The author has treated in the following manner cases of papilledema due to plumbism, in which the optic disc advanced from 2 to 9 diopters: First, removal from their homes, so that further ingestion of the poison may not occur. Second, immediate lumbar puncture, resulting in the withdrawal under pressure of 6 or 8, or even 16 ounces of clear cerebrospinal fluid. This is repeated every third or fourth day, until the tension ceases to

be high. Seldom have more than three lumbar punctures to be done. Third, administration of magnesium sulphat and dilute sulphuric acid to render insoluble any lead in the intestines, and to cause its evacuation. Fourth, administration of iodid of potassium after intestinal canal has been cleared, not before. Fifth, deionization by the two bath method, to eliminate the lead from the body. At no time was a decompression operation necessary.

In gummatous cases as much as 8 diopters was observed. In some, lumbar puncture was done, but they were all at once put on mercurial inunctions and iodid of potassium. Several illustrative case histories accompany the contribution. As an appendix, three case histories of partial neuritic atrophy after ocular plumbism in children, are cited. The lead came from paint on the veranda rails. D. F. H.

Zirm, E. Periodic Exophthalmos and Congenital Enophthalmos. Wien. med. Woch. 1921. No. 24, p. 1091.

Zirm's case of exophthalmos had, in three months, eight attacks of edema of the eyelids with exophthalmos, affecting the right eye 6 times and the left eye twice.

His second case was one of congenital enophthalmos in a girl of 14. Mobility of eyeball upward and downward normal, outward no movements, inward, slight movement only, but the eye dips markedly into the orbit. The color of the iris in the enophthalmic eye was darker than its fellow. He also noticed the affected eye being softer.

H. A.

Young, George, Subconjunctival Advancement. British Journal of Ophth. 1922, Vol. 6, p. 323.

With a straight canaliculus knife, the tendon and belly of the muscle and the opposing surface of the sclera is rasped for a distance of about ¼ inch backwards. Two strong silk sutures are inserted in double loops thru the whole conjunctiva and muscle belly, one thru its upper half, and the second thru its lower half, and are again passed thru corresponding points at the limbus, where not only conjunctiva, but half the thickness of the sclera is taken up on the point of the needle. The two sutures, tied and firmly drawn together, will tuck the muscle on itself. The lumping disappears in a few months.

D. F. H.

NEWS ITEMS

DEATHS.

Dr. Charles H. Ansley, New Orleans, aged 49, died October 3rd from pernicious anemia.

Dr. G. Erwin Brinckerhoff, Oakland, California, aged 60, died October 3rd from angina pectoris and myocarditis.

Dr. Adelaide C. Duncan, Chicago, aged 56, died September 9th from bronchial asthma.

Dr. Henry Edmund Greene, Crawfordsville, Indiana, died October 2nd from chronic nephritis, at the age of fifty-five.

PERSONALS.

Dr. William C. Finnoff of Denver is in Vienna taking postgraduate work.

Dr. Melville Black, Denver was recently elected president of the Colorado State Medical Society.

Major A. G. Wade, West Point, has resigned from the Army, and will open an office at Vicksburg, Mississippi.

An announcement has just been received of the marriage, on October nineteenth, of Dr. Henry H. Martin and Miss Lena I. Bishop at Savannah, Georgia.

Dr. A. B. Middleton of Pontiac, Illinois, has been appointed head medical officer for the Illinois State Department of the American Legion.

Dr. Richard C. Gamble, of Chicago, is in Vienna taking a two months' course in ophthalmology. He goes from there to England, where he will continue his work at Moorfields.

Dr. Charles Chassaignac, Dean of the New Orleans Polyclinic, Post Graduate School of Medicine of the Tulane University of Louisiana, has been appointed medical superintendent of the Eye, Ear, Nose and Throat Hospital, New Orleans.

Dr. A. R. Ubaldo, the Chief of the Eye, Ear, Nose and Throat Department of the Philippine General Hospital of Manila, has recently inaugurated the Barraquer technic of intracapsular extraction of cataract with the improved erisiphake.

Dr. L. Webster Fox of Philadelphia was a guest of the Ophthalmic Section of the British Medical Association, which met in Glasgow in July. Mrs. L. Webster Fox, President of the Daughters of the British Empire in the United States, in her official capacity made a presentation of a circle of white heather to the grave of the Unknown Soldier at Westminster Abbey.

Dr. and Mrs. William A. Fisher, of Chicago, sailed on November 21 for a trip to India. Dr. Fisher expects to visit Dr. Holland in Shikarpur, who has done as many as 110 cataract extractions in one day. He expects to spend two weeks with Dr. Barraquer in Barcelona, and see Col. Henry Smith in London.

Professor Ernest Fuchs of Vienna, who is now on the last lap of a journey around the world, stopped off in Honolulu for three weeks of rest and sight seeing. While in Honolulu, Prof. Fuchs gave his lecture on "Arteriosclerosis of the Retinal Vessels", following a lunch given in his honor by the honorary staff of the Queen's Hospital. Prof. Fuchs also kindly consented to hold an informal clinic at the offices of Drs. J. A. Morgan and F. A. Plum.

MISCELLANEOUS.

The instruction in Ophthalmology and Otorhinolaryngology is now given in the third and fourth years of the undergraduate medical course of the University of the Philippines, instead of in the fifth year as formerly. The instruction in these subjects is now further aided by the use of lantern slides.

The Canadian Institute for the Blind recently opened a department for the administration of massage treatment and other forms of physical therapeutics, at Pearson Hall, Toronto, under the supervision of Dr. D. J. McDougall. Treatments will be given at these quarters, or masseurs will visit patients on prescription of a medical practitioner.

The Eyesight Conservation Council of America has elected a number of prominent educators to the board of councilors. Among them are Sidney E. Mezes, Ph.D., President of the College of the City of New York; Prof. Joseph E. Roe of New York University; Charles H. Judd, Ph.D., of the University of Chicago, and Francis C. Caldwell of Ohio State University.

The annual congress in France for the amelioration of the blind, recently held, voted unanimously in favor of the Cantonnet-Nouet system of writing as a means of communication between the blind and the seeing. This method is printed like the Braille, with a punch, but the holes are made to correspond to the outlines of the letters, so that the word can be read at a glance. It does not take the place of the Braille, but supplements it for those who do not understand the Braille.

The wording of an amendment to the Sanitary Code of the Board of Health of New York is somewhat strenuous. The portion referred to reads: "It shall be the duty of *every* physician, nurse, midwife or other persons in attendance on a confinement case, to instil in the eyes of the new-born child, a one percent solution of nitrate of silver." If the letter of the law is observed, the newborn child might have more silver solution instilled into its eyes than the law intended.

Current Literature

These are the titles of papers bearing on ophthalmology received in the past month. Later most of them will be noticed in Ophthalmic Literature. They are given in English, some modified to indicate more clearly their subjects. They are grouped under appropriate heads, and in each group arranged alphabetically, usually by the author's name in **heavy-face type.** The abbreviations mean: (Ill.) illustrated; (Pl.) plates; (Col. Pl.) colored plates. Abst. shows it is an abstract of the original article. (Bibl.) means bibliography and (Dis.) discussion published with a paper. Under repeated titles are given additional references to papers already noticed. To secure early mention, copies of papers or reprints should be sent to 217 Imperial Building, Denver, Colorado.

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Haab. Ophthalmoscopy. Arch. f. Augenh., v. 85, p. 113. Abst. Ann. d'Ocul., 1922, v. 159, p. 699.

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Jackson, E. Examination of eye by direct sunlight. (4 ill.) J. A. M. A., 1922, v. 79, pp. 1216-1221.

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Magitot and Bailliart. Blood pressure in vessels of eye. A. J. O., 1922, v. 5, pp. 824-828.

Yoshida. Examination of eye by polarized light. Nippon Gank. Zasshi, 1921, Sept.

Repeated title: **Birkhaueser.** (A. J. O., 1922, v. 5, p. 852). Inter. Med. and Surg. Survey, 1922, v. 4, (8a-263).

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Patton, J. M. Pros and cons of foreign protein injections in affections of eye. Jour. Iowa State Med. Soc., 1922, v. 12, pp. 387-391.

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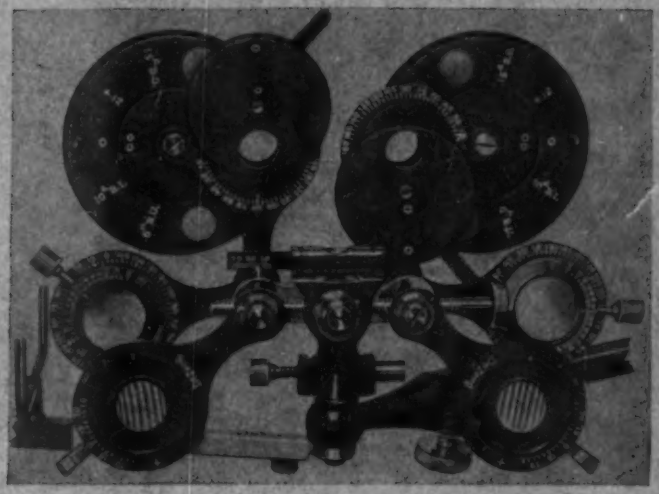

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